# HUMAN ASPROSIN ELISA KIT

**FOR THE QUANTITATIVE DETERMINATION OF HUMAN ASPROSIN 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:**

**THIS KIT IS FOR ONE TIME USE ONLY.**

| **ELISA NAME** | **HUMAN ASPROSIN ELISA KIT** |
|---|---|
| **Catalog No.** | SK00229-06 |
| **Lot No.** | |
| **Formulation** | 96 T |
| **Standard Range** | 0.125 ~ 8 nM/L |
| **Sensitivity** | 0.025 nM/L |
| **Sample Volume** | 100 µL per well |
| **Sample Type** | Serum, EDTA Plasma |
| **Specificity** | Human Asprosin |
| **Calibration** | Human Asprosin Recombinant |
| **Dilution Factor** | **Optimal dilutions should be determined by each laboratory for each application** |
| **Intra-assay Precision** | 2 - 6% |
| **Inter-assay Precision** | 4- 9% |
| **Storage** | 2 – 8° C for 4 months. Longer storage for up to 10 months check page 2~3 |
| **This kit contains sufficient materials to run 35 samples duplicated provided that assay is run according to protocol.** | |

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## DESCRIPTION

This Human Asprosin/Fibrillin-1 (2732-2871) ELISA Kit contains the necessary components required for the quantitative measurement of recombinant and/or natural human Asprosin from serum and plasma in a sandwich ELISA format.

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

## ASSAY OVERVIEW

This assay employs the quantitative sandwich ELISA format. The plate is pre-coated with a monoclonal antibody specific for human Asprosin. The capture antibody can bind to the human Asprosin in the standard and samples. After washing the plate of any unbound substances, a biotinylated monoclonal antibody against human Asprosin 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 is added to the wells and color develops in direct proportion to the amount of human Asprosin bound in the standard dilutions 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.
_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 |
|---|---|---|
| **Asprosin Microplate** - 96 well microplate (12 strips of 8 wells) coated with monoclonal antibody against human Asprosin. | **229-06-01** | **1 plate** |
| **Asprosin Standard** – 128 nM, 1 ml of human Asprosin lyophilized. | **229-06-02** | **1 vial** |
| **Detection Antibody Concentrate** – 1.2 mL/vial of 10-fold concentrate of biotinylated monoclonal antibody against human Asprosin lyophilized | **229-06-03** | **1 vial** |
| **Streptavidin-HRP Conjugate** - 120 µL of 100-fold concentrated Streptavidin-HRP Conjugate. | **SAHRP** | **1 vial** |
| **Dilution Buffer** - 45 mL of buffered protein based solution with preservative. | **DB10** | **1 bottle** |
| **Antibody Diluent Solution** – 12 mL of buffered protein based solution with preservative. | **DB103** | **1 bottle** |
| **HRP Diluent Solution** – 12 mL of buffered protein based solution with preservative. | **DB08B** | **1 bottle** |
| **Wash Buffer** - 25 mL of 20-fold concentrated buffered surfactant, with preservative. | **WB01** | **1 bottle** |
| **TMB Substrate Solution** - 11 mL of TMB substrate solution. | **TMB01** | **1 bottle** |
| **Stop Solution** - 11 mL of 0.25M HCl. | **S-STOP** | **1 bottle** |
| **Plate Sealer** | **EAPS** | **1** |
| **Plastic Pouch** | **P01** | **1** |

## STORAGE

**Unopened Kit:** Store at 2 – 8° C for up to 4 months. For longer storage up to 10 months, unopened Standard, Positive Control, Detection Antibody Concentrate, Dilution Buffer, Antibody and HRP

Diluent Solution should be stored at -20° C. Streptavidin-HRP Conjugate and TMB Substrate Solution should be stored only at 2-8° C. Do not use kit past expiration date.

## 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.

## SAMPLE PREPARATION

Serum or plasma samples may need 2-8 fold dilution.
**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 25 mL of Wash Buffer Concentrate into deionized or distilled water (475 mL) to prepare 500 mL of 1x Wash Buffer.
**Asprosin Standard -** Reconstitute the Asprosin standard with 1.0 mL of **Dilution Buffer (DB10)**. This reconstitution produces a stock solution of 128 nM/L. 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 and #6. Use the stock solution to produce a dilution series (below). Mix each tube thoroughly before the next transfer. The **8 nM/L** standard serves as the high standard. The Dilution Buffer serves as the zero standard (0 nM/L).

| TUBE | STANDARD | DILUTION BUFFER | CONCENTRATION |
|---|---|---|---|
| Stock | Powder | 1000 µl | 128 nM/L |
| optional | 150 µl of stock | 450 µl | 32 nM/L |
| # 1 | 40 µl of stock | 620 µl | 8 nM/L |
| # 2 | 250 µl of 1 | 250 µl | 4 nM/L |
| # 3 | 250 µl of 2 | 250 µl | 2 nM/L |
| # 4 | 250 µl of 3 | 250 µl | 1 nM/L |
| # 5 | 250 µl of 4 | 250 µl | 0.5 nM/L |
| # 6 | 250 µl of 5 | 250 µl | 0.25 nM/L |
| # 7 | 250 µl of 6 | 250 µl | 0.125 nM/L |

**Detection Antibody Concentrate** – Reconstitute the Detection Antibody Concentrate with 1.5 mL of **Dilution Buffer (DB10)** to prepare 10-fold concentrated solution. Pipette 9.45 mL of **Dilution Buffer (DB36)** into a 15 mL centrifuge tube and transfer 1.05 mL of 10-fold concentrated stock solution to prepare working solution.

**Streptavidin HRP Conjugate** – Freshly Pipette 10.89 mL of **HRP Diluent Solution (DB08B)** into a 15 mL centrifuge tube and transfer 110 µL of 100-fold concentrated stock solution to prepare working solution **(protect from light)**. The working solution should be used within 10 minutes.

## 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. Add 100 µL per well of Dilution Buffer to Blank wells.
3. Add 100 µL of Standard dilutions, samples, or positive control per well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature.
4. 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 µL) 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.
5. Add 100 µL of Detection Antibody working solution to each well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature.
6. Repeat the aspiration/wash as in step 4.
7. Add 100 µL 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.**
8. Repeat the aspiration/wash as in step 4.
9. Add 100 µL of TMB Substrate Solution to each well. Incubate for 20 minutes on microplate shaker at room temperature. **Protect from light.**
10. Add 100 µL 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.
11. Determine the optical density of each well using a microplate reader set to 450 nm within 3 minutes.

## 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.

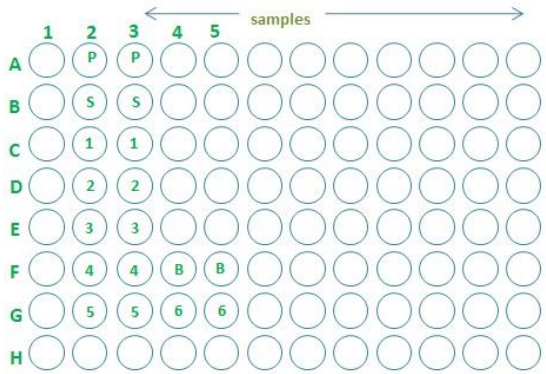
## TYPICAL STANDARD CURVE

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

| STANDARD (nM/L) | CORRECTED (450nm) |
|---|---|
| Blank | 0 (0.121) |
| 0.125 | 0.040 |
| 0.25 | 0.097 |
| 0.5 | 0.161 |
| 1 | 0.299 |
| 2 | 0.571 |
| 4 | 1.119 |
| 8 | 1.890 |

## SPECIFICITY

| PROTEINS | CROSS-REACTIVITY (%) |
|---|---|
| Human Asprosin | 100 |
| Human Asprosin (1-103) | 0 |
| Human Elastin | 0 |
| Human Irisin | 0 |
| Human Betatrophin | 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 20 min on the plate shaker at RT. **Protect from light.** |
| ↓ |
| Add 100 µl of Stop Solution to each well. Read at 450nm within 3 minutes. |