



# Human Kappa-casein(CSN3) ELISA kit

**Catalog No. CSB-EL006064HU**

(96 tests)

- This immunoassay kit allows for the in vitro quantitative determination of **human CSN3** concentrations in **serum, plasma, tissue homogenates and other biological fluids..**
- **Expiration date** six months from the date of manufacture
- **FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.**

## **PRINCIPLE OF THE ASSAY**

This assay employs the direct competitive inhibition enzyme immunoassay technique. An antibody specific for CSN3 has been pre-coated onto a microplate. Add CSN3 (Standards or samples) to the well, and then add Biotin-conjugated CSN3. A competitive inhibition reaction is launched between CSN3 (Standards or samples) and Biotin conjugated CSN3 with the CSN3 antibody. Then add the HRP-avidin to each well. The substrate solutions are added to the wells, respectively. And the color develops in opposite to the amount of CSN3 bound in the initial step. The color development is stopped and the intensity of the color is measured.

## **DETECTION RANGE**

3.12 µg/ml-200µg/ml. The standard curve concentrations used for the ELISA's were 200µg/ml,100µg/ml,50µg/ml,25µg/ml,12.5µg/ml, 6.25µg/ml, 3.12µg/ml

## **SPECIFICITY**

This assay recognizes human CSN3. No significant cross-reactivity or interference was observed.

## SENSITIVITY

The minimum detectable dose of human CSN3 is typically less than 1.56µg/ml.

The sensitivity of this assay, or Lower Limit of Detection (LLD) was defined as the lowest concentration that could be differentiated from zero.

## MATERIALS PROVIDED

Reagent	Quantity
Assay plate (96 tests)	1
Standard	2
Biotin -conjugate	1 x 60µl
Biotin –conjugate Diluent	1 x 10 ml
HRP-Avidin	1 x 120µl
HRP-avidin Diluent	1 x 10 ml
Sample Diluent	2 x 20 ml
Wash Buffer	1 x20 ml (25xconcentrate)
TMB Substrate	1 x 10 ml
Stop Solution	1 x 10 ml

## STORAGE

1. Unopened test kits should be stored at 2-8°C upon receipt and the microtiter plate should be kept in a sealed bag with desiccants to minimize exposure to damp air. The test kit may be used throughout the expiration date of the kit. Refer to the package label for the expiration date.
2. Opened test kits will remain stable until the expiring date shown, provided it is stored as prescribed above.
3. A microtiter plate reader with a bandwidth of 10 nm or less and an optical density range of 0-3 OD or greater at 450nm wavelength is acceptable for use in absorbance measurement.

## REAGENT PREPARATION

*Bring all reagents to room temperature before use.*

1. **Wash Buffer** If crystals have formed in the concentrate, warm up to room temperature and mix gently until the crystals have completely dissolved. Dilute 20 ml of Wash Buffer Concentrate into deionized or distilled water to prepare 500 ml of Wash Buffer..
2. **Biotin-conjugate** Centrifuge the vial before opening. Dilute to the working concentration using **Biotin- conjugate Diluent(1:100)**, respectively.

3. **HRP-avidin** Centrifuge the vial before opening. Dilute to the working concentration using **HRP-avidin Diluent(1:100)**, respectively.
4. **Standard**
5. Centrifuge the standard vial at 6000-10000rpm for 30s. Reconstitute the **Standard** with 1.0 ml of **Sample Diluent**. This reconstitution produces a stock solution of 200µg/ml. The 200µg/ml standard serves as the high standard(tube#1). Label eight tubes#2 through #8.
6. Pipette 150µl Sample Diluent into tubes#2-8. Add 150µl of the 200µg/ml standard (**tube #1**) to tube #2. Vortex thoroughly. Add 150µl of tube #2 to tube #3 and vortex thoroughly,Continue this for tubes #3 through #7. Mix each tube thoroughly before the next transfer. Sample Diluent serves as the zero standard (0µg/ml) (**tube #8**).

The concentration of human CSN3 in tubes #1through #8 will be 200 , 100 , 50 , 25 , 12.5, 6.25 , 3.12 and 0 µg/ml respectively.

Diluted standards should be used within 30 minutes of preparation.

*Precaution: The Stop Solution provided with this kit is an acid solution. Wear eye, hand, face, and clothing protection when using this material.*

## OTHER SUPPLIES REQUIRED

- Microplate reader capable of measuring absorbance at 450 nm, with the correction wavelength set at 540 nm or 570 nm.
- Pipettes and pipette tips.
- Deionized or distilled water.
- Squirt bottle, manifold dispenser, or automated microplate washer.

## 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 g. Remove serum and assay immediately or aliquot and store samples at -20°C. Centrifuge the sample again after thawing before the assay. Avoid repeated freeze-thaw cycles.
- **Plasma** Collect plasma using citrate, EDTA, or heparin as an anticoagulant. Centrifuge for 15 minutes at 1000 g within 30 minutes of collection. Assay immediately or aliquot and store samples at -20°C. Centrifuge the sample again after thawing before the assay. Avoid repeated freeze-thaw cycles.
- **Tissue Homogenates** 100mg tissue was rinsed with 1X PBS, homogenized in 1 mL of 1X PBS and stored overnight at -20° C. After two freeze-thaw cycles were performed to break the cell

membranes, the homogenates were centrifuged for 5 minutes at 5000 x g. The supernate was assayed and removed immediately. Alternatively, aliquot and store samples at -20°C. Centrifuge the sample again after thawing before the assay. Avoid repeated freeze-thaw cycles.

## **SAMPLE PREPARTION**

For serum, plasma and tissue homogenates samples, recommend to test undiluted samples.

For other samples, recommend to determine the dilution factor by pretest. The optimal dilution factor should be determined by users according to their particular experiments.

## **ASSAY PROCEDURE**

*Bring all reagents and samples to room temperature before use. It is recommended that all samples, standards, and controls be assayed in duplicate.*

1. Set a Blank well without any solution.
2. Add 50µl of **Standard** or **Sample** per well.
3. Add 50µl of **Biotin-conjugate** to each well.
4. Cover with the adhesive strip. Incubate for 30 minutes at 37° C.
5. Aspirate each well and wash, repeating the process for a total of three to three washes. Wash by filling each well with Wash Buffer

(about 200µl) using a squirt bottle, multi-channel pipette, 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 100µl of **HRP-avidin** to each well. Cover with the adhesive strip. Incubate for 30 minutes at 37°C.
7. Aspirate each well and wash, repeating the process for a total of five to five washes. Wash by filling each well with Wash Buffer (about 200µl) using a squirt bottle, multi-channel pipette, 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.
8. Add 90µl of **TMB Substrate** to each well. Incubate for 20 minutes at 37°C. Keeping the plate away from drafts and other temperature fluctuations in the dark.
9. Add 50µl of Stop Solution to each well. If color change does not appear uniform, gently tap the plate to ensure thorough mixing.
10. Determine the optical density of each well within 30 minutes, using a microplate reader set to 450 nm.



## **CALCULATION OF RESULTS**

Average the duplicate readings for each standard and sample and subtract the optical density of Blank. Create a standard curve by reducing the data using computer software. As an alternative, construct a standard curve by plotting the absorbance ratio for each standard on the x-axis against the concentration on the y-axis and draw a best fit curve through the points on the graph. The data may be linearized by plotting the log of the CSN3 concentrations versus the ratio and the best fit line can be determined by regression analysis. This procedure will produce an adequate but less precise fit of the data. If samples have been diluted, the concentration read from the standard curve must be multiplied by the dilution factor.

## **LIMITATIONS OF THE PROCEDURE**

- The kit should not be used beyond the expiration date on the kit label.
- Do not mix or substitute reagents with those from other lots or sources.
- If samples generate values higher than the highest standard, dilute the samples with the Sample Diluent and repeat the assay.
- Any variation in operator, pipetting technique, washing technique, incubation time or temperature, and kit age can cause variation in binding.

- This assay is designed to eliminate interference by soluble receptors, binding proteins, and other factors present in biological samples. Until all factors have been tested in the Immunoassay, the possibility of interference cannot be excluded.

## **TECHNICAL HINTS**

- When mixing or reconstituting protein solutions, always avoid foaming.
- To avoid cross-contamination, change pipette tips between additions of each standard level, between sample additions, and between reagent additions. Also, use separate reservoirs for each reagent.
- When using an automated plate washer, adding a 30 second soak period following the addition of wash buffer, and/or rotating the plate 180 degrees between wash steps may improve assay precision.
- To ensure accurate results, proper adhesion of plate sealers during incubation steps is necessary.
- Substrate Solution should remain colorless until added to the plate. Keep Substrate Solution protected from light. Substrate Solution should change from colorless to gradations of blue.

- Stop Solution should be added to the plate in the same order as the Substrate Solution. The color developed in the wells will turn from blue to yellow upon addition of the Stop Solution. Wells that are green in color indicate that the Stop Solution has not mixed thoroughly with the Substrate Solution.