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## Notice

Check your package **insert & kit box** for lot specific instructions

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# KOMA ELISA Kit

## User Manual



LABISKOMA



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## **EzWay Human TNF-alpha ELISA Kit**

|                       |                      |
|-----------------------|----------------------|
| <b>Catalog No.</b>    | <b>K1331131</b>      |
| <b>Lot No.</b>        | <b>39032</b>         |
| <b>Quantity</b>       | <b>96 tests</b>      |
| <b>Storage</b>        | <b>4°C</b>           |
| <b>Standard Range</b> | <b>7.8-500 pg/ml</b> |

### **[Important Notice]**

- Please read this User Manual carefully prior to performing the assay.
- The reagent preparation method might be different from lot to lot, so please check the lot and follow the instructions given in this manual.
- Do not mix or interchange reagents between different lots.
- The kit is intended for Research Use Only.

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## DESCRIPTION

This kit contains all the necessary reagents required for performing quantitative measurement of the protein from samples including serum, plasma, culture medium or other biological fluids in a sandwich ELISA format.

## KIT COMPONENTS

| Component   | Amount  |
|---|---------|
| Pre-Coated 96 well ELISA microplate                             | 1 Plate |
| Biotinylated Affinity Purified Detection Antibody (Lyophilized) | 2 EA    |
| Recombinant Standard Protein (Lyophilized)                      | 2 EA    |
| Streptavidin-HRP Conjugate (0.6 ml)                             | 2 EA    |
| Assay Diluent (50 ml) : 1% BSA in PBS                           | 1 EA    |
| Assay Dileunt G (10 ml) : N/A                                   | N/A     |
| TMB or pink-ONE Solution (10 ml)                                | 1 EA    |
| Stop Solution (10 ml)   | 1 EA    |
| Wash Buffer Concentrate (20X, 50 ml) to make 1 liter            | 1 EA    |
| Plate Sealer  | 3 EA    |

## STORAGE AND STABILITY

- Store kit at 4°C immediately upon receipt.
- The shelf life of the kit is one year from date of shipment.
- Expiry of the kit is stated on labels.

## STANDARD RANGE

Standard Range                      7.8-500 pg/ml

## **SAMPLE PREPARATION**

- **Store all samples on ice after preparation and use immediately or aliquot and store at -80°C.**
- **Avoid repeated freeze-thaw cycles.**

### **1) Cell culture supernatants**

Centrifuge cell culture media at 1,500 rpm for 10 minutes at 4°C to remove particulates.

Immediately aliquot supernatants and store at -80°C.

### **2) Serum**

Samples should be collected into a serum separator tube. After clot formation, centrifuge samples at 3,000 rpm for 10 minutes at 4°C to remove clots. Immediately aliquot supernatants and store at -80°C.

### **3) Plasma**

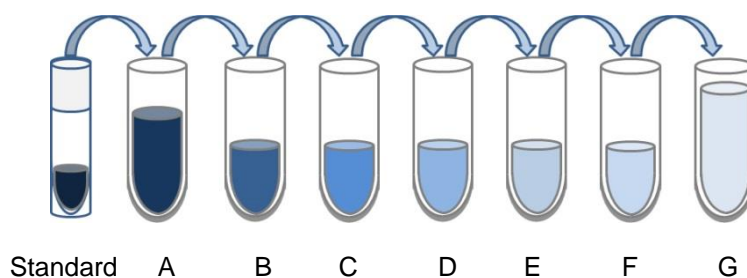
Collect plasma using anti-coagulant (citrate, EDTA or heparin). Centrifuge samples at 3,000 rpm for 15 minutes at 4°C. Immediately aliquot supernatants and store at -80°C.

## REAGENT PREPARATION

- Do not mix or substitute Assay Diluent from other kit lots.
- All reagents should be prepared right before use, and diluted solution should be used immediately.

### 1) Standard Protein

Reconstitute 1 vial of Standard protein in 0.1 ml sterile water to a concentration of 20,000 pg/ml. Then dilute in Assay Diluent at 1:2 serial dilutions as follows. The standard diluent buffer serves as zero standard.



**Table 1.**

| Step   | Dilution Method      |                             | Concentration |
|--------|----------------------|-----------------------------|---------------|
| Step A | 0.025 ml of Standard | + 0.975 ml of Assay Diluent | 500 pg/ml     |
| Step B | 0.5 ml of Step A     | + 0.5 ml of Assay Diluent   | 250 pg/ml     |
| Step C | 0.5 ml of Step B     | + 0.5 ml of Assay Diluent   | 125 pg/ml     |
| Step D | 0.5 ml of Step C     | + 0.5 ml of Assay Diluent   | 62.5 pg/ml    |
| Step E | 0.5 ml of Step D     | + 0.5 ml of Assay Diluent   | 31.25 pg/ml   |
| Step F | 0.5 ml of Step E     | + 0.5 ml of Assay Diluent   | 15.625 pg/ml  |
| Step G | 0.5 ml of Step F     | + 0.5 ml of Assay Diluent   | 7.8125 pg/ml  |

## **2) Detection Antibody**

Reconstitute 1 vial of Detection Antibody in 0.3 ml sterile water, and dilute 1:10 in Assay Diluent.

**NOTE:** Reconstituted solutions are stable at -20°C for up to 1 month. Do not repeat freezing and thawing.

## **3) Streptavidin-HRP**

Dilute the Streptavidin-HRP conjugate 1:10 in Assay Diluent.

## **4) Wash Buffer**

Dilute the 20X Wash Buffer Concentrate in 1 L distilled water.

## ELISA PROCEDURE

- 1) **Washing:** Add 200 ul of Washing Solution to each well. Aspirate the wells to remove liquid and wash the plate 3 times using 300 ul of Washing Solution per well. After the last wash, invert plate to remove residual solution and blot on paper towel.

**NOTE:** Do not let the well dry completely and go immediately to the next step.

- 2) **Reaction:** Add 50 ul of standard, blank and sample to each well in duplicate. And then add 50 ul of the diluted detection antibody per well. Cover the plate with the Plate Sealer. Incubate at room temperature for at least 2 hours on a microplate shaker.

- 3) **Washing:** Aspirate the wells to remove liquid and wash the plate 4 times as in step 1.

**NOTE:** Vigorous washing of the plate after incubation steps is essential to obtaining low background values.

- 4) **Conjugates:** Add 100 ul of the diluted Streptavidin-HRP per well. Cover the plate with the Plate Sealer. Incubate 30 minutes at room temperature (or at 37°C for 30 minutes) on a microplate shaker.

- 5) **Washing:** Aspirate and wash plate 4 times as in step 1.

- 6) **Color Development:** Add 100 ul of TMB or pink-ONE TMB solution to each well. Incubate at room temperature for a proper color development. Add 100 ul of the stop solution to each well.

**NOTE:** Please be aware that the color may develop more quickly or more slowly than the recommended incubation time depending on the localized room temperature. Please monitor the color development to optimize the incubation time.

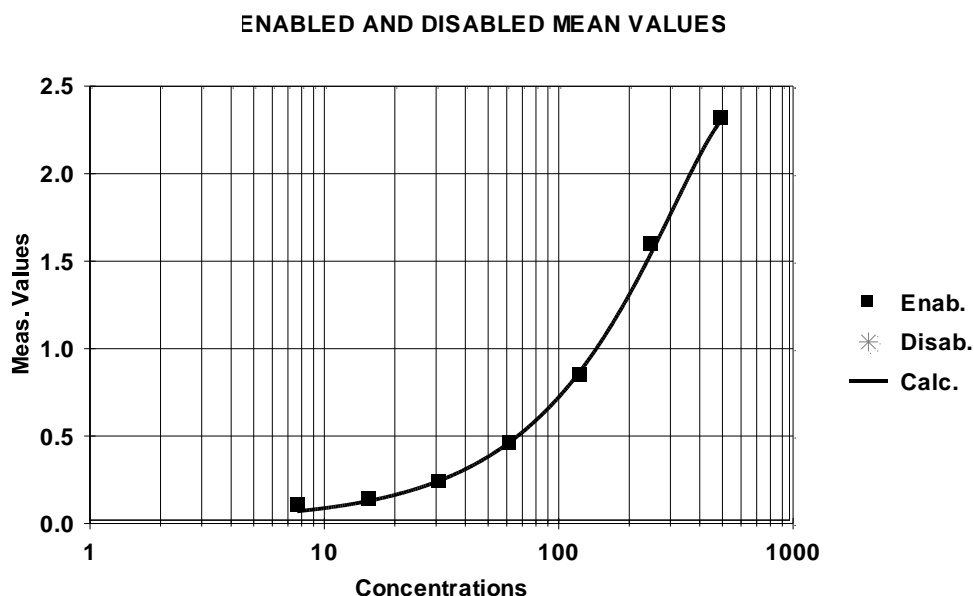


**NOTE:** Stop Solution ( $\text{H}_2\text{SO}_4$ ) is a caustic material. Eye, hand, face and clothing protection should be worn when handling this reagent. [www.labiskoma.co.kr](http://www.labiskoma.co.kr)

7) **Reading:** Using a microplate reader, measure absorbance at 450 nm.

## CALCULATION OF RESULTS

Create a standard curve by reducing the data using ELISA reader's computer software capable of generating Standard curve-fit. A standard curve should be generated for each set of samples.



**Human TNF-alpha (pg/ml)**  
(40 minutes color development)

## CROSS REACTIVITY

To define the specificity of this ELISA, several proteins were tested for cross reactivity at 50 ng/ml.

Human : N/A  
 Mouse : N/A  
 Rat : N/A  
 Others : N/A

## TROUBLESHOOTING

| Problem                               | Probable Cause  | Solution  |
|---------------------------------------|---|---|
| <b>Low OD<br/>No Signal</b>           | Reagents not fresh or contaminated  | Ensure proper preparation of reagents.  |
|                                       | Incubation time not long enough   | Ensure sufficient incubation times.   |
|                                       | Incubation temperature too low  | Reagent solutions should be at RT before use.   |
|                                       | Stop solution not added   | Addition of stop solution   |
| <b>High OD</b>                        | Inadequate standard dilution  | Ensure proper dilution of Standard.   |
|                                       | Inadequate incubation time of detection antibody, Streptavidin-HRP or Substrate   | Decrease incubation time.   |
| <b>Poor consistency of replicates</b> | Inadequate washing  | Increase the stringency of washes.  |
|                                       | Inaccurate pipetting  | Ensure accurate pipetting of volume and avoid air bubbles.  |
|                                       | Inadequate mixing of samples  | Mix samples thoroughly before pipetting   |
|                                       | High particulate matter of samples  | Mix samples thoroughly and remove particulates by centrifugation.   |
|                                       | Cross-well contamination  | Use fresh plate sealers or pipette tips   |
| <b>High background</b>                | Contamination of reagents or samples  | Use a clean container before addition into wells.   |
|                                       | Insufficient plates washing   | Ensure proper washing of each well  |
|                                       | Too much concentrated detection antibody and Streptavidin-HRP   | Ensure proper dilution of detection antibody or conjugate and incubation time.  |
|                                       | Substrate solution or stop solution is not fresh  | Use fresh substrate and stop solution.  |
|                                       | Plate left too long before reading on the plate reader  | Read on the plate reader right after the experiment.  |
|                                       | Incubation temperature is too high  | Decrease incubation temperature of substrate.   |
| <b>Poor standard curve</b>            | Samples contain no or below detectable levels of analyte or samples contain analyte concentrations greater than the highest standard point. | If samples are below detectable levels, higher sample volume. If samples are higher than detectable levels, it may require dilution and reanalysis. |

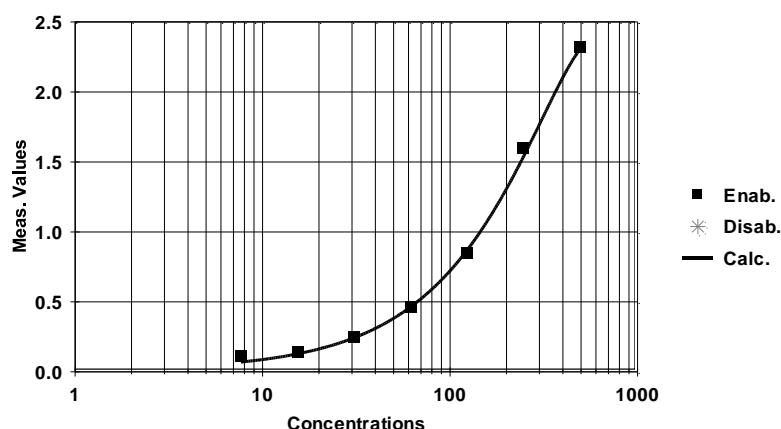
**PLATE LAYOUT**

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|----|----|----|
| A |   |   |   |   |   |   |   |   |   |    |    |    |
| B |   |   |   |   |   |   |   |   |   |    |    |    |
| C |   |   |   |   |   |   |   |   |   |    |    |    |
| D |   |   |   |   |   |   |   |   |   |    |    |    |
| E |   |   |   |   |   |   |   |   |   |    |    |    |
| F |   |   |   |   |   |   |   |   |   |    |    |    |
| G |   |   |   |   |   |   |   |   |   |    |    |    |
| H |   |   |   |   |   |   |   |   |   |    |    |    |

# CERTIFICATE OF ANALYSIS

**Product** EzWay Human TNF-alpha ELISA Kit  
**Catalog No.** K1331131  
**Lot No.** 39032  
**Quantity** 96 tests  
**Storage** 4°C  
**Standard Range** 7.8-500 pg/ml

ENABLED AND DISABLED MEAN VALUES



**Human TNF-alpha (pg/ml)**  
 (40 minutes color development)

## Layout map for calibrators sheet

|   | Concentration |              | OD (450nm) |
|---|---------------|--------------|------------|
| A | Cal_1         | 500 pg/ml    | 2.31       |
| B | Cal_2         | 250 pg/ml    | 1.59       |
| C | Cal_3         | 125 pg/ml    | 0.843      |
| D | Cal_4         | 62.5 pg/ml   | 0.454      |
| E | Cal_5         | 31.25 pg/ml  | 0.237      |
| F | Cal_6         | 15.625 pg/ml | 0.136      |
| G | Cal_7         | 7.8125 pg/ml | 0.102      |
| H | Blank         | 0 pg/ml      | 0.056      |