

## Anti-Tirzepatide (LY3298176) Human IgG ELISA Kit

**Catalog No:** KAK13902

**Quantity:** 1 plate

**Lot:** xxxxxxxx

**Expiration:** 6 months from receipt

|                     |  |
|---------------------|--|
| <b>Specificity:</b> | Anti-Tirzepatide (LY3298176)   |
| <b>Sensitivity:</b> | 2.35 ng/ml, minimum detectable dose (MDD) Anti-Tirzepatide (LY3298176) |
| <b>Range:</b>       | 3.13 – 200 ng/mL   |
| <b>Sample Type:</b> | Serum and plasma   |

### MATERIALS PROVIDED & STORAGE CONDITIONS

| PART                                | FORMAT    | DESCRIPTION  | STORAGE CONDITIONS     |
|-------------------------------------|-----------|--|------------------------|
| Pre-coated Microplate               | 1 plate   | 96 well polystyrene microplate (12 strips of 8 wells) precoated with Tirzepatide.  | Store sealed at -20°C. |
| Anti-Tirzepatide Human IgG Standard | 2 bottles | 200 ng/bottle of lyophilized Anti-Tirzepatide (LY3298176) Human IgG. Reconstitute in 1 mL  | Store at -20°C.        |
| Detection A                         | 1 vial    | 120 µL/vial of HRP conjugated probe (including preservative), 1:100 diluted by Assay Diluent before used.                              | Store at -20°C.        |
| Standard Diluent                    | 1 bottle  | 25 mL/bottle diluent (including preservative) was used to dilute the Standard and Samples.   | Store at 2 - 8°C.      |
| Assay Diluent                       | 1 bottle  | 25 mL/bottle diluent (including preservative) was used to dilute the Detection A.  | Store at 2 - 8°C.      |
| 20 x Wash Buffer                    | 1 bottle  | 25 mL/bottle of a 20-fold concentrated solution of buffered surfactant with preservative, 1:20 diluted by deionized water before used. | Store at 2 - 8°C.      |
| Color Reagent                       | 1 bottle  | 12 mL/ bottle of TMB (Tetramethylbenzidine).   | Store at 2 - 8°C.      |
| Stop Solution                       | 1 bottle  | 6 mL/ bottle.  | Store at 2 - 8°C.      |
| Plate Sealers                       | 4 strips  | Adhesive strips.   | Store at RT.           |

\* Provided this is within the expiration date of the kit.

**Note: Unopened kits should be stored at 2 - 8°C upon receiving.**

**For opened kits, if you want to prolong the storage time, please store the Standard, Detection A and Microplate at - 20°C, the rest reagents should be store at 2 - 8°C.**

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## Anti-Tirzepatide (LY3298176) Human IgG ELISA Kit

### INTENDED USE

Used for the quantitative determination of Anti-Tirzepatide (LY3298176) Human IgG concentration in serum and plasma.

### PRINCIPLE OF THE ASSAY

This assay employs the quantitative indirect enzyme immunoassay technique. Tirzepatide (LY3298176) has been pre-coated onto a microplate. Samples or standards are pipetted into microwells and Anti-Tirzepatide (LY3298176) Human IgG will be captured by immobilized protein. After washing away any unbound substances, an HRP-conjugated probe is added to the wells. Following a wash to remove any unbound enzyme reagent, a substrate solution is added to the wells and color develops in proportion to the amount of Anti-Tirzepatide (LY3298176) Human IgG bound in the initial step. The color development is stopped, and the intensity of the color is measured.

### SAMPLE COLLECTION & STORAGE

The sample collection and storage conditions listed below are intended as general guidelines. Sample stability has not been evaluated.

Handle all blood and serum as if capable of transmitting infectious agents. The NCCLS provides recommendations for handling and storing serum and plasma specimens (Approved Standard-Procedures for the Handling and Processing of Blood Specimens, H18-A. 1990).

Serum - Use a serum separator tube (SST) and allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Remove serum and assay immediately or aliquot and store samples at  $\leq -20^{\circ}\text{C}$ . 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  $\leq -20^{\circ}\text{C}$ . Avoid repeated freeze-thaw cycles.

### OTHER SUPPLIES REQUIRED

- Microplate reader capable of measuring absorbance at 450 nm, with the correction wavelength set at 630 nm or 620 nm.
- Pipettes and pipette tips.
- Deionized or distilled water.
- 500 mL graduated cylinder.
- Squirt bottle, manifold dispenser, or automated microplate washer.
- Test tubes for dilution of standards.



## Anti-Tirzepatide (LY3298176) Human IgG ELISA Kit

### REAGENT PREPARATION

Bring all reagents to room temperature before use.

**20X Wash Buffer Concentrate** - If crystals have formed in the concentrate, warm to room temperature and mix gently until the crystals have completely dissolved. Add 25 mL of Wash Buffer Concentrate to 475 mL of deionized or distilled water to prepare 500 mL of **Wash Buffer**.

**Serum and Plasma** - Serum and plasma samples require a 10-fold dilution. A suggested 10-fold dilution is 10  $\mu$ L of sample + 90  $\mu$ L of **Standard Diluent** (diluted 1:9). If the sample value is outside the range of the standard curve, the dilution can be adjusted appropriately, and the assay can be redetermined. If the antibody concentration in the sample can be estimated and the assay can be performed simultaneously by diluting several gradients prior to the experiment.

**Standard** - Reconstitute with 1 mL **Standard Diluent**, this reconstitution produces a **stock solution** of **200 ng/mL**. Allow the standard to sit for a minimum of 15 minutes with gentle agitation prior to making dilutions. 200 ng/mL is the first standard point, and the concentration of the 7 standard samples were 200 ng/mL, 100 ng/mL, 50 ng/mL, 25 ng/mL, 12.5 ng/mL, 6.25 ng/mL, 3.13 ng/mL respectively. The appropriate **Standard Diluent** serves as the zero standard (0 ng/mL).

**\*Note:** Use a new standard for each assay and discard after use. Avoid freeze-thaw cycle.

**Detection A** (working solution) - Shake and mix before used. Centrifuge instantaneously with palm centrifuge to make the liquid at the bottom of the tube. Dilute the **Detection A** 1: 100 times to the working concentration with **Assay Diluent**.

**\*Note:** Prepare **Detection A** working solution immediately before use and avoid diluting the entire stock at one time.



## Anti-Tirzepatide (LY3298176) Human IgG ELISA Kit

### ASSAY PROCEDURE

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

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 foil pouch containing the desiccant pack, and reseal.
3. Add 100  $\mu$ L standard or samples to each well. Cover with the adhesive strip provided. Incubate for 1 hour at 37 °C.
4. Aspirate each well and wash, repeating the process **three** times. Wash by filling each well with **Wash Buffer** (300  $\mu$ L) using a squirt bottle, manifold dispenser, or auto-washer. 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 on clean paper towels.
5. Add 100  $\mu$ L of **Detection A** (working solution) to each well. Cover with a new adhesive strip. Incubate for 30 minutes at 37 °C.
6. Aspirate each well and wash, repeating the process **five** times. Wash by filling each well with **Wash Buffer** (300  $\mu$ L) using a squirt bottle, manifold dispenser, or auto-washer. 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 on clean paper towels.
7. Add 100  $\mu$ L of **Color Reagent** to each well. Incubate for 15 minutes at 37 °C. Protect from light.
8. Add 50  $\mu$ 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 the color change does not appear uniform, gently tap the plate to ensure thorough mixing.
9. Determine the optical density of each well within 10 minutes, using a microplate reader set to 450 nm. If wavelength correction is available, set to 630 nm or 620 nm. If wavelength correction is not available, subtract readings at 630 nm or 620 nm from the readings at 450 nm. This subtraction will correct for optical imperfections in the plate. Readings made directly at 450 nm without correction may be higher and less accurate.

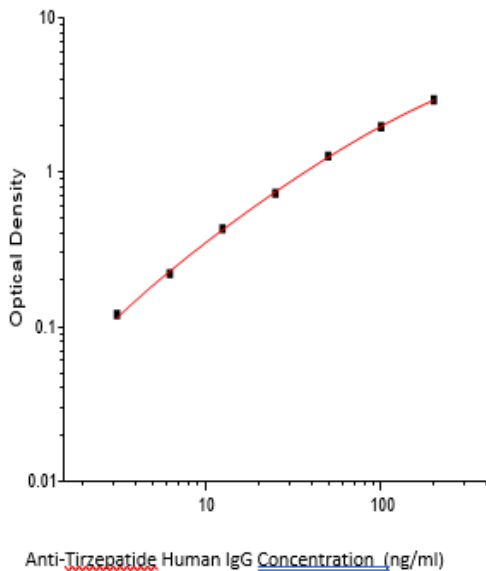


## Anti-Tirzepatide (LY3298176) Human IgG ELISA Kit

### CALCULATION OF RESULTS

Average the duplicate readings for each standard and sample. Construct a standard curve by plotting the mean absorbance for each standard on the Y-axis against the concentration on the X-axis and draw a best fit curve through the points on the graph. The data may be linearized by plotting the log of the Anti-Tirzepatide (LY3298176) Human IgG concentrations versus the log of the O.D. 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.



| (ng/mL) | O.D.         | Average | Corrected |
|---------|--------------|---------|-----------|
| 0       | 0.02<br>0.02 | 0.02    | -         |
| 3.13    | 0.15<br>0.13 | 0.14    | 0.12      |
| 6.25    | 0.24<br>0.24 | 0.24    | 0.22      |
| 12.5    | 0.45<br>0.44 | 0.45    | 0.43      |
| 25      | 0.75<br>0.74 | 0.75    | 0.73      |
| 50      | 1.30<br>1.28 | 1.29    | 1.27      |
| 100     | 1.99<br>1.99 | 1.99    | 1.97      |
| 200     | 2.97<br>2.92 | 2.95    | 2.93      |



## Anti-Tirzepatide (LY3298176) Human IgG ELISA Kit

### ASSAY RANGE

3.13 - 200 ng/ml

### SENSITIVITY

The minimum detectable dose (MDD) of Anti-Tirzepatide (LY3298176) Human IgG is typically less than 2.35 ng/ml.

The MDD was determined by adding two standard deviations to the mean O.D. value of twenty zero standard replicates and calculating the corresponding concentration.

### PRECISION

Intra-Assay Precision (Precision within an assay): <10%

Three samples of known concentration were tested sixteen times on one plate to assess intra-assay precision.

Inter-Assay Precision (Precision between assays): <15%

Three samples of known concentration were tested in twenty-four separate assays to assess inter-assay precision.

|                    | Intra-Assay Precision |      |     | Inter-Assay Precision |      |     |
|--------------------|-----------------------|------|-----|-----------------------|------|-----|
| Sample             | 1                     | 2    | 3   | 1                     | 2    | 3   |
| n                  | 16                    | 16   | 16  | 24                    | 24   | 24  |
| Mean (ng/mL)       | 83.1                  | 22.1 | 5.8 | 93.9                  | 22.2 | 5.7 |
| Standard deviation | 5.0                   | 1.6  | 0.3 | 4.5                   | 1.2  | 0.5 |
| CV (%)             | 6.1                   | 7.1  | 5.8 | 4.7                   | 5.5  | 8.9 |



## Anti-Tirzepatide (LY3298176) Human IgG ELISA Kit

### STABILITY

When the kit was stored at the recommended temperature for 6 months, the signal intensity decreased by less than 20%.

To prolong the storage time, please store the **Standard, Detection A and Microplate at -20°C**. Remaining reagents should be stored at 4°C.

### RECOVERY

The recovery of Anti-Tirzepatide (LY3298176) Human IgG spiked to three different levels in human serum samples throughout the range of the assay was evaluated.

| Sample            | Dilution factor | Average (%) | Range (%) |
|-------------------|-----------------|-------------|-----------|
| Human serum (n=3) | 1:10            | 100         | 90-107    |
|                   | 1:20            | 97          | 90-115    |

### LINEARITY

To assess the linearity of the assay, human serum samples were spiked with high concentrations of Anti-Tirzepatide (LY3298176) Human IgG and diluted with the **Standard Diluent** to produce samples with values within the dynamic range of the assay. (Human serum samples were prediluted 10-fold)

| Sample            | Dilution factor | Average (%) | Range (%) |
|-------------------|-----------------|-------------|-----------|
| Human serum (n=3) | 1:2             | 103         | 96-108    |
|                   | 1:4             | 101         | 98-104    |
|                   | 1:8             | 102         | 99-104    |
|                   | 1:16            | 110         | 94-119    |



## Anti-Tirzepatide (LY3298176) ELISA Kit

### TROUBLESHOOTING GUIDE

| Problem                | Probable Cause   | Solution  |
|------------------------|--|---|
| <b>Poor Precision</b>  | Wells are not washed or aspirated properly                                   | Make sure the wash apparatus works properly and wells are dry after aspiration                                      |
|                        | Bubbles in the wells   | Tap plate gently to disperse bubbles  |
|                        | Wells are scratched with pipette tip or washing needles                      | Dispense and aspirate solution into and out of wells with caution   |
|                        | Particulates are found in the samples  | Remove any particulates by centrifugation prior to the assay  |
| <b>High background</b> | Plate is not washed properly   | Make sure the wash apparatus works properly   |
|                        | Incorrect incubation times and/or temperatures                               | The OD value increased gradually with time. Reduce the color developing time properly                               |
| <b>Weak/No Signal</b>  | Pipetting errors   | Make sure the pipette is calibrated   |
|                        | The working solution not prepared immediately before use                     | The working solution should be prepared immediately before use and should not be stored                             |
|                        | Volumes errors   | Repeat assay with the required volumes in manual  |
|                        | The plate is not incubated for proper time or temperature                    | Follow the manual to repeat assay   |
|                        | <b>Detection A</b> working solution is not completely mixed with the samples | After adding <b>Detection A</b> to the wells, make sure the <b>Detection A</b> and the samples are mixed thoroughly |

