**Mouse IgE ELISA MAX™ Deluxe Sets**

BioLegend’s ELISA MAX™ Deluxe Sets contain the components necessary for the accurate quantification of natural and recombinant mouse IgE. These sets are designed for cost-effective and accurate quantification of mouse IgE in cell culture supernatant, serum, plasma or other biological fluids. They are sensitive, accurate, and robust.

It is **highly recommended that this instruction sheet be read in its entirety before using this product. Do not use this set beyond the expiration date.**

**Materials Provided**

1. Mouse IgE ELISA MAX™ Capture Antibody (200X)
2. Mouse IgE ELISA MAX™ Detection Antibody (200X)
3. Mouse IgE Standard
4. Avidin-HRP (1000X)
5. Substrate Solution A
6. Substrate Solution B
7. Coating Buffer A (5X)
8. Assay Diluent A (5X)
9. NUNC Maxisorp™ 96 MicroWell Plates
10. Instruction Sheet
11. Lot-Specific Instruction/ Analysis Certificate

**Performance Characteristics**

**Sensitivity:** The minimum detectable concentration of IgE is 0.1 ng/mL.

**Specificity:** No cross reactivity was detected when this kit was used to analyze other mouse immunoglobulins and IgE from other species.

**Troubleshooting**

High Background:
- Background wells were contaminated.
- Matrix used had endogenous analyte.
- Plate was insufficiently washed.
- TMB Substrate Solution was contaminated.

No signal:
- Incorrect or no antibodies were added.
- Avidin-HRP was not added.
- Substrate solution was not added.
- Wash buffer contains sodium azide.

Low or poor signal for the standard curve:
- Standard was incompletely reconstituted or was stored improperly.
- Reagents were added to wells with incorrect concentrations.
- Plate was incubated with improper temperature, timing or agitation.

Signal too high, standard curves saturated:
- Standard was reconstituted with less volume than required.
- One or more reagent incubation steps were too long.
- Plate was incubated with inappropriate temperature, timing, or agitation.

Sample readings out of range:
- Samples contain no or below detectable levels of analyte.
- Samples contain analyte concentrations greater than highest standard point.

High variations in samples and/or standards:
- Pipetting errors may have occurred.
- Plate washing was inadequate or nonuniform.
- Samples were not homogenous.
- Samples or standard wells were contaminated.

**Reference Using This Set**


**Assay Procedure Summary**

1. Coat plate with 100 μL diluted Capture Antibody incubate overnight, 4°C
2. Wash 4 times
   - Add 200 μL 1X Assay Diluent A incubate 1 hr, RT, shaking
3. Wash 4 times
   - Add 100 μL diluted standards and samples incubate 2 hrs, RT, shaking
4. Wash 4 times
   - Add 100 μL Detection Antibody incubate 1 hr, RT, shaking
5. Wash 4 times
   - Add 100 μL Avidin-HRP incubate 30 min. RT, shaking
6. Wash 5 times
   - Add 100 μL Substrate Solution incubate 20 min. RT, in the dark
7. Add 100 μL Stop Solution
8. Read absorbance at 450 nm and 570 nm

**For research purposes only. Not for use in diagnostic or therapeutic procedures.**

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Materials to be Provided by the End-User
- A microplate reader capable of measuring absorbance at 450 nm
- Adjustable pipettes to measure volumes ranging from 2 μL to 1 mL
- Deionized (DI) water
- PBS (Phosphate-Buffered Saline): 8.0 g NaCl, 1.26 g Na₂HPO₄, 0.2 g KH₂PO₄, 0.2 g KCl, add deionized water to 1 L; pH to 7.4, 0.2 μm filtered
- Wash Buffer (Phosphate-Buffered Saline (PBS) + 0.05% Tween-20, pH 7.4). BioLegend Cat. No. 421601 is recommended.
- Water bottle or automated microplate washer
- Stop Solution (2N H₂SO₄)
- Log-Log graph paper or software for data analysis
- Tubes to prepare standard dilutions
- Timer
- Plate Sealer
- Absorbent paper

Storage Information
- Store kit components at 4°C.
- After reconstitution of the lyophilized standard with 1X Assay Diluent A, aliquot into polypropylene vials and store at -70°C for up to one month. Avoid repeated freeze/thaw cycles.
- Prior to use, bring all components to room temperature (18-25°C). Upon assay completion return all components to appropriate storage conditions.

Health Hazard Warnings
1. Reagents that contain preservatives may be harmful if ingested, inhaled or absorbed through the skin. Refer to the MSDS online for details (www.biolegend.com/support/#msds).
2. Substrate Solution A and Substrate Solution B are harmful if ingested. Additionally, avoid skin, eye or clothing contact.
3. To reduce the likelihood of blood-borne transmission of infectious agents, handle all serum and/or plasma in accordance with NCCLS regulations.

Specimen Collection and Handling
Cell Culture Supernatant: If necessary, centrifuge to remove debris prior to analysis. Samples can be stored at < -20°C. Avoid repeated freeze/thaw cycles.
- Serum: Use a serum separator tube and allow clotting for at least 30 minutes, then centrifuge for 10 minutes at 1,000 X g. Remove serum layer and assay immediately or store serum samples at < -20°C. Avoid repeated freeze/thaw cycles. Serum specimens should be clear and non-hemolyzed.
- Plasma: Collect blood sample in a citrate, heparin or EDTA containing tube. Centrifuge for 10 minutes at 1,000 X g within 30 minutes of collection. Assay immediately or store plasma samples at < -20°C. Avoid repeated freeze/thaw cycles. Plasma specimens should be clear and non-hemolyzed.

Reagent Preparation
- Do not mix reagents from different sets or lots. Reagents and/or antibodies from different manufacturers should not be used with this set. All reagents should be diluted immediately prior to use.

1. Dilute 5X Coating Buffer to 1X with deionized water. For one plate, dilute 2.4 mL 5X Coating Buffer in 9.6 mL deionized water.
2. Dilute pre-titrated Capture Antibody 1:200 in 1X Coating Buffer. For one plate, dilute 60 μL Capture Antibody in 11.94 mL 1X Coating Buffer.
3. Dilute 5X Assay Diluent A to 1X with PBS (pH 7.4). For 50 μL, dilute 10 mL 5X Assay Diluent A in 40 mL PBS.
   NOTE: Precipitation of 5X Assay Diluent A may be observed when stored long term at 4°C. The precipitation does not alter the performance of the Buffer. If heavy precipitation is observed after the dilution to 1X Assay Diluent A, it can be filtered to clarify the solution.
4. Lyophilized vials are under vacuum pressure. Reconstitute lyophilized standard with 0.2 mL of 1X Assay Diluent A. Allow the reconstituted standard to sit for 15 minutes at room temperature, then mix gently prior to making dilutions.
5. Prior to use, prepare 1,000 μL of the top standard at a concentration of 10 ng/mL from the stock solution in Assay Diluent A (refer to Lot-Specific Instruction/Analysis Certificate).
6. Dilute the pre-titrated Biotinylated Detection Antibody 1:200 in 1X Assay Diluent A. For one plate, dilute 60 μL Detection Antibody in 11.94 mL Assay Diluent A.
7. Dilute Avidin-HRP 1:1000 in 1X Assay Diluent A. For one plate, dilute 12 μL Avidin-HRP in 11.99 mL Assay Diluent A.
8. TMB Substrate Solution is a mixture of equal volumes of Substrate Solution A with Substrate Solution B. Mix the two components immediately prior to use. For one plate mix 6 mL Substrate Solution A with 6 mL of Substrate Solution B in a clean container (solution should be clear and colorless).

Assay Procedure
Do not use sodium azide in any solutions as it inhibits the activity of the horseradish-peroxidase enzyme.

1. One day prior to running the ELISA, dilute Capture Antibody in 1X Coating Buffer as described in Reagent Preparation. Add 100 μL of this Capture Antibody solution to all wells of a 96-well plate provided in this set. Seal plate and incubate overnight (16-18 hrs) at 4°C.
2. Bring all reagents to room temperature (RT) prior to use. It is strongly recommended that all standards and samples be run in duplicate or triplicate. A standard curve is required for each assay.
3. Wash plate 4 times with at least 300 μL Wash Buffer per well and blot residual buffer by firmly tapping plate upside down on absorbent paper. All subsequent washes should be performed similarly.
4. To block non-specific binding and reduce background, add 200 μL 1X Assay Diluent A per well.
5. Seal plate and incubate at RT for 1 hour with shaking at 200 rpm on a plate shaker.
6. While plate is being blocked, prepare the appropriate sample dilutions (if necessary) and standards.
7. Prepare 1,000 μL of top standard at 10 ng/mL in 1X Assay Diluent A (refer to Reagent Preparation). Perform six two-fold serial dilutions of the 10 ng/mL top standard with Assay Diluent A in separate tubes. After diluting, the mouse IgE standard concentrations are 10 ng/mL, 5 ng/mL, 2.5 ng/mL, 1.25 ng/mL, 0.625 ng/mL, 0.313 ng/mL and 0.156 ng/mL, respectively. Assay Diluent A serves as the zero standard (0 pg/mL).
8. Add 100 μL/well of standards or samples to the appropriate wells. If dilution is required, samples should be diluted in 1X Assay Diluent A before adding to the wells.
9. Seal plate and incubate at RT for 2 hours with shaking.
10. Wash plate 4 times with Wash Buffer.
11. Add 100 μL of diluted Detection Antibody solution to each well, seal plate and incubate at RT for 1 hour with shaking.
12. Wash plate 4 times with Wash Buffer.
13. Add 100 μL of diluted Avidin-HRP solution to each well.
14. Seal plate and incubate at RT for 30 minutes with shaking.
15. Wash plate 5 times with Wash Buffer. For this final wash, soak wells in Wash Buffer for 30 seconds to 1 minute for each wash. This will help minimize background.
16. Add 100 μL of freshly mixed TMB Substrate Solution and incubate in the dark for 20 minutes*. Positive wells should turn blue in color. It is not necessary to seal the plate during this step.
17. Stop reaction by adding 100 μL of Stop Solution to each well. Positive wells should turn from blue to yellow.
18. Read absorbance at 450 nm within 30 minutes. If the reader can read at 570 nm, the absorbance at 570 nm can be subtracted from the absorbance at 450 nm.

*Optimal substrate incubation time depends on laboratory conditions and the optical linear ranges of ELISA plate readers.

Calculation of Results
Plot the standard curve on log-log axis graph paper with analyte concentration on the x-axis and absorbance on the y-axis. Draw a best-fit line through the standard points. To determine the unknown analyte concentrations in the samples, find the absorbance value of the unknown on the y-axis and draw a horizontal line to the standard curve. At the point of intersection, draw a vertical line to the x-axis and read the corresponding analyte concentration. If the samples were diluted, multiply by the appropriate dilution factor. The data is best calculated with computer-based curve-fitting software using a 5- or 4-parameter logistics curve-fitting algorithm. If a test sample’s absorbance value falls outside the standard curve ranges, that test sample needs to be reanalyzed at a higher or lower dilution as appropriate.

Typical Data

- **Standard Curve:** This standard curve was generated at BioLegend for demonstration purposes only. A standard curve must be run with each assay.

![Standard Curve](image)