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Immunoglobulin E (IgE) ELISA

Catalog No. TI244A (96 Tests)

INTENDED USE

The Calbiotech IgE ELISA Kit is intended for the quantitative measurement of IgE in human serum. **For Research Use Only. For professional use only. Not for use in diagnostic procedures.**

SUMMARY AND EXPLANATION

IgE constitutes a fraction of the total antibody in serum 50-300 ng/ml (compared to 10 mg/ml for IgG) and together with its Fc receptor is important in primary immune responses. TIgE plays a central role in type I hypersensitivity reactions. Research includes allergy mechanisms, mast cell activation, Fcε receptor signaling, and parasite–host immune interactions.

PRINCIPLE OF THE TEST

The Calbiotech Inc. IgE ELISA kit is a solid phase sandwich assay method, based on a streptavidin-biotin principle. The standards, samples and the biotinylated Anti-IgE antibody reagent are added into designated wells, coated with Streptavidin. Endogenous IgE in the patient's serum binds to the antigenic site of the biotinylated Anti-IgE antibody. Simultaneously, the biotinylated antibody is immobilized onto the wells through the high affinity Streptavidin-Biotin interaction. Unbound protein and excess biotin conjugated antibody are washed off by wash buffer. Upon the addition of the Peroxidase (HRP) conjugated Anti-IgE antibody reagent, a sandwich complex is formed, the analyte of interest being in between the two highly specific antibodies, labeled with Biotin and HRP. Unbound excess enzyme conjugated antibody reagent is washed off by wash buffer. Upon the addition of the substrate, the intensity of color developed is directly proportional to the concentration of IgE in the samples. A standard curve is prepared relating color intensity to the concentration of the IgE.

MATERIALS PROVIDED		96 TESTS
1.	Microwell coated with Streptavidin	12x8x1
2.	IgE Standard: 6 vials (ready to use)	0.5 mL
3.	IgE Control: 2 vials (ready to use)	0.5 mL
4.	IgE Biotin Conjugate: 1 bottle (ready to use)	12 mL
5.	IgE Enzyme Conjugate: 1 bottle (ready to use)	12 mL
6.	TMB Substrate: 1 bottle (ready to use)	12 mL
7.	Stop Solution: 1 bottle (ready to use)	12 mL
8.	20X Wash concentrate: 1 bottle	25 mL

MATERIALS NOT PROVIDED

1. Distilled or deionized water
2. Precision pipettes
3. Disposable pipette tips
4. ELISA reader capable of reading absorbance at 450nm
5. Absorbance paper or paper towel
6. Graph paper

STORAGE AND STABILITY

1. Store the kit at 2 - 8° C.
2. Keep microwells sealed in a dry bag with desiccants.
3. The reagents are stable until expiration of the kit.

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WARNINGS AND PRECAUTIONS

Potential biohazardous materials:

1. The standards contain human source components which have been tested and found non-reactive for hepatitis B surface antigen as well as HIV antibody with FDA licensed reagents. However, as there is no test method that can offer complete assurance that HIV, Hepatitis B virus or other infectious agents are absent, these reagents should be handled at the Biosafety Level 2, as recommended in the Centers for Disease Control/National Institutes of Health manual, "Biosafety in Microbiological and Biomedical Laboratories." 1984.
2. Do not pipette by mouth. Do not smoke, eat, or drink in the areas in which specimens or kit reagents are handled.
3. The components in this kit are intended for use as an integral unit. The components of different lots should not be mixed.
4. It is recommended that standards, control and serum samples be run in duplicate
5. Optimal results will be obtained by strict adherence to this protocol. Accurate and precise pipetting, as well as following the exact time and temperature requirements prescribed are essential. Any deviation from this may yield invalid data.

SPECIMEN COLLECTION HANDLING

This assay is designed for use with human serum or plasma samples obtained in compliance with applicable laws, regulations, and institutional policies. Handle and store samples using procedures appropriate for research use. Samples may be stored refrigerated (2–8 °C) for up to seven days, or frozen (–20 °C or below) for up to six months. Avoid repetitive freeze–thaw cycles.

REAGENTS PREPARATION

Prepare 1X Wash buffer by adding the contents of the bottle (25 ml, 20X) to 475 ml of distilled or deionized water. Store at room temperature (20-25°C).

ASSAY PROCEDURE

Prior to assay, allow reagents to stand at room temperature.

Gently mix all reagents before use.

1. Place the desired number of coated strips into the holder
2. Pipette 25 µl of IgE standards, controls, and samples in to appropriate wells.
3. Add 100 µl of Biotin Reagent into each well. Shake the plate for (10-30) sec.
4. Cover the plate and incubate for 30 minutes at room temperature (20-25°C).
5. Remove liquid from all wells. Remove liquid from all wells. Wash wells three times with 300 µl of 1X wash buffer. Blot on absorbance paper or paper towel.
6. Add 100 µl of Enzyme Reagent into each well.
7. Cover the plate and incubate for 30 minutes at room temperature (20-25°C).
8. Remove liquid from all wells. Remove liquid from all wells. Wash wells three times with 300 µl of 1X wash buffer. Blot on absorbance paper or paper towel.
9. Add 100 µl of TMB substrate to all wells.
10. Incubate for 15 minutes at room temperature.
11. Add 50 µl of stop solution to all wells. Shake the plate gently to mix the solution.
12. Read absorbance on ELISA Reader at 450 nm within 15 minutes after adding the stopping solution.

CALCULATION OF RESULTS

The standard curve is constructed as follows:

1. Check IgE standard value on each standard vial. This value might vary from lot to lot. Make sure you check the value on every kit. See example of the standard attached.
2. To construct the standard curve, plot the absorbance for the IgE standards (vertical axis) against its concentration in IU/ml (horizontal axis) on a linear graph paper. Draw the best curve through the points.
3. Use the absorbance for controls and each unknown sample to determine the corresponding concentration of IgE from the standard curve.

EXAMPLE OF A STANDARD CURVE

Standard, IU/ml	OD 450NM
0	0.014
5	0.05
25	0.22
50	0.43
150	1.11
400	2.33

LIMITATIONS OF THE TEST

1. The test results obtained using this kit serve only as an aid to diagnosis and should be interpreted in relation to the patient's history, physical findings and other diagnostic procedures.
2. Do not use sodium azide as preservative. Sodium azide inhibits HRP enzyme activities.