Beta-2-Glycoprotein 1 IgA ELISA Kit

Cat. No.:DEIA1863  
Pkg.Size:96T

**Intended use**

The Beta-2-Glycoprotein 1 IgA ELISA Kit is an indirect solid phase enzyme immunoassay (ELISA) for measurement of IgA class autoantibodies against beta-2-Glycoprotein I in human serum or plasma.

**General Description**

Apolipoprotein H (Apo-H), previously known as (β2-glycoprotein I, beta-2 glycoprotein I), is a multifunctional apolipoprotein. One of its functions is to bind cardiolipin. When bound the structure of cardiolipin and Apo-H both undergo large changes in structure. Within the structure of Apo-H is a stretch of positively charged amino acids, (protein sequence positions 282-287) Lys-Asn-Lys-Glu-Lys-Lys, are involved in phospholipid binding (See image on right). Apo-H has a complex involvement in agglutination, it appears to alter ADP mediated agglutination of platlets. Normally Apo-H assumes an anti-coagulation activity in serum (by inhibiting coagulation factors), however changes in blood factors can result of a reversal of that activity.

**Principle Of The Test**

Highly purified beta-2-glycoprotein I is bound to microwells. Antibodies against this antigen, if present in diluted serum or plasma, bind to the respective antigen. Washing of the microwells removes unspecific serum and plasma components. Horseradish peroxidase (HRP) conjugated anti-human IgA immunologically detects the bound patient’s antibodies forming a conjugate/antibody/antigen complex. Washing of the microwells removes unbound conjugate. An enzyme substrate in the presence of bound conjugate hydrolyzes to form a blue colour. The addition of an acid stops the reaction forming a yellow end product. The intensity of this yellow colour is measured photometrically at 450 nm. The amount of colour is directly proportional to the concentration of IgA antibodies present in the original sample.

**Reagents And Materials Provided**

1. Divisible microplate consisting of 12 modules of 8 wells each, coated with highly purified beta-2-Glycoprotein I. Ready to use; 1 plate
2. Calibrators with IgA class Anti-beta-2-glycoprotein I antibodies (A-F) in a serum/buffer matrix (PBS, BSA, NaN3<0.1% (w/w)), Ready to use; 6 vials, 1.5 ml each
   - IgA: 0; 6.3; 12.5; 25; 50 and 100 U/ml.
3. Anti-beta-2-Glycoprotein I controls in serum/buffer matrix (PBS, BSA, NaN3<0.1% (w/w)) positive and negative, for the respective concentrations see the enclosed package insert. Ready to use; 2 vials, 1.5 ml each
4. Sample buffer (Tris, NaN3<0.1% (w/w)), yellow, concentrate (5x); 1 vial, 20 ml 5. Enzyme conjugate solution (PBS, Proclin 300 <0.5% (v/v)), (light red) containing polyclonal rabbit anti-human IgA, labelled with horseradish peroxidase. Ready to use; 1 vial, 15 ml 6. TMB substrate solution. Ready to use; 1 vial, 15 ml 7. Stop solution (contains acid). Ready to use; 1 vial, 15 ml 8. Wash solution (PBS, NaN3<0.1% (w/w)), concentrate (50x); 1 vial, 20 ml

**Materials Required But Not Supplied**

1. Microplate reader capable of endpoint measurements at 450 nm
2. Multi-Channel Dispenser or repeatable pipette for 100 µl
3. Vortex mixer
4. Pipettes for 10 µl, 100 µl and 1000 µl
5. Laboratory timing device
6. Data reduction software
7. Distilled or deionised water
8. Graduated cylinder for 100 and 1000 ml
9. Plastic container for storage of the wash solution

**Storage**

1. Store the kit at 2-8 °C. 
2. Keep microplate wells sealed in a dry bag with desiccants.
3. The reagents are stable until expiration of the kit.
4. Do not expose test reagents to heat, sun or strong light during storage and usage.
5. Diluted sample buffer and wash buffer are stable for at least 30 days when stored at 2-8 °C.

**Specimen Collection And Handling**

1. Collect whole blood specimens using acceptable medical techniques to avoid hemolysis.
2. Allow blood to clot and separate the serum by centrifugation.
3. Test serum should be clear and non-hemolysed. Contamination by hemolysis or lipemia is best avoided, but does not interfere with this assay.
4. Specimens may be refrigerated at 2-8 °C for up to five days or stored at -20 °C up to six months.
5. Avoid repetitive freezing and thawing of serum samples. This may result in variable loss of autoantibody activity.
6. Testing of heat-inactivated sera is not recommended.

**Reagent Preparation**

**Sample Buffer**
Dilute the contents of each vial of the sample buffer concentrate (5x) with distilled or deionized water to a final volume of 100 ml prior to use.
Store refrigerated: stable at 2-8 °C for at least 30 days after preparation or until the expiration date printed on the label.

**Wash Solution**
Dilute the contents of each vial of the buffered wash solution concentrate (50x) with distilled or deionized water to a final volume of 1000 ml prior to use.
Store refrigerated: stable at 2-8 °C for at least 30 days after preparation or until the expiration date printed on the label.

**Sample preparation**
Dilute all samples 1:100 with sample buffer before assay.
Therefore combine 10 μl of sample with 990 μl of sample buffer in a polystyrene tube. Mix well.
Controls are ready to use and need not be diluted.

**Assay Steps**

1. Prepare a sufficient number of microplate modules to accommodate controls and prediluted patient samples.
2. Pipette 100 μl of calibrators, controls and prediluted patient samples in duplicate into the wells.
3. Incubate for 30 minutes at room temperature (20-28 °C)
4. Discard the contents of the microwells and wash 3 times with 300 μl of wash solution.
5. Dispense 100 μl of enzyme conjugate into each well.
6. Incubate for 15 minutes at room temperature.
7. Discard the contents of the microwells and wash 3 times with 300 μl of wash solution.
8. Dispense 100 μl of TMB substrate solution into each well.
9. Incubate for 15 minutes at room temperature.
10. Add 100 μL of stop solution to each well of the modules and incubate for 5 minutes at room temperature.
11. Read the optical density at 450 nm and calculate the results. Bi-chromatic measurement with a reference at 600-690 nm is recommended.

The developed colour is stable for at least 30 minutes. Read optical densities during this time.

**Precautions**

1. Do not interchange kit components from different lots.
2. Components containing human serum were tested and found negative for HBsAg, HCV, HIV1 and HIV2 by FDA approved methods. No test can guarantee the absence of HBsAg, HCV, HIV1 or HIV2, and so all human serum based reagents in this kit must be handled as though capable of transmitting infection.
3. Avoid contact with the TMB (3,3´,5,5´-Tetramethyl-benzidine). If TMB comes into contact with skin, wash thoroughly with water and soap.
4. Avoid contact with the stop solution which is acid. If it comes into contact with skin, wash thoroughly with water and seek medical attention.
5. Some kit components (i.e. controls, sample buffer and buffered wash solution) contain Sodium Azide as preservative. Sodium Azide (Na3) is highly toxic and reactive in pure form. At the product concentrations (0.09%), though not hazardous. Despite the classification as non-hazardous, we strongly recommend using prudent laboratory practices (see 8., 9., 10.)
6. Some kit components contain Proclin 300 as preservative. When disposing reagents containing Proclin 300, flush drains with copious amounts of water to dilute the components below active levels.
7. Wear disposable gloves while handling specimens or kit reagents and wash hands thoroughly afterwards.
8. Do not pipette by mouth.
9. Do not eat, drink, smoke or apply makeup in areas where specimens or kit reagents are handled.
10. Avoid contact between the buffered peroxide solution and easily oxidized materials; extreme temperature may initiate spontaneous combustion.

Observe the guidelines for performing quality control in medical laboratories by assaying controls and/or pooled sera. During handling of all kit reagents, controls and serum samples observe the existing legal regulations.

**REFERENCES**