SSB Autoantibody ELISA

INTENDED USE
The SSB (La) IgG ELISA Kit is intended for the detection of IgG class antibodies to SSB in human serum or plasma. For research use only.

SUMMARY AND EXPLANATION
Systemic autoimmune disease is characterized by the presence of circulating auto-antibodies directed to a wide variety of cellular antigens. Systemic lupus erythematosus (SLE), commonly referred to as Lupus is the best known of these diseases. Other possible connective tissue diseases include mixed connective tissue disease (MCTD), Sjögren syndrome, scleroderma, and polymyositis/dermatomyositis. The majority can be diagnosed by clinical presentation and their antibody profiles to the various antigens involved, which include dsDNA, Sm, RNP, SSA, SSB, Scl-70, Jo1 and Histones. Therefore, immunoassays for autoantibodies are useful for diagnostic and prognostic evaluations of autoimmune disease. The 48 kd phosphoprotein known as SSB (La) is a transcription termination factor for RNA polymerase III. SSB shuttles between nucleus and cytoplasm and exists both free and as a component of the SSA/SSB ribonucleoprotein cytoplasmic particle. Autoantibodies to SSB are detected by ELISA in ~70-90% of primary and ~50% of secondary Sjögren syndrome as well as in ~25% of SLE and ~60% of subacute cutaneous lupus and in the majority of infants with complete heart block. SSB autoantibodies are found only in sera determined to contain SSA autoantibodies by a sensitive method; this probably reflects the association of the SS-A and SS-B antigens in a macromolecular complex.

PRINCIPLE OF THE TEST
Diluted patient serum is added to wells coated with purified antigen. IgG specific antibody, if present, binds to the antigen. All unbound materials are washed away and the enzyme conjugate is added to the antibody-antigen complex, if present. Excess enzyme conjugate is washed off and substrate is added. The plate is incubated to allow the hydrolysis of the substrate by the enzyme. The intensity of the color generated is proportional to the amount of IgG specific antibody in the sample.

MATERIALS PROVIDED

<table>
<thead>
<tr>
<th>MATERIALS PROVIDED</th>
<th>Qty/Type</th>
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</thead>
<tbody>
<tr>
<td>1. Microwell coated with SSB antigen</td>
<td>1/2x8/1</td>
</tr>
<tr>
<td>2. Sample Diluent: 1 bottle (ready to use)</td>
<td>22 ml</td>
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<tr>
<td>3. Calibrator: T Vial (ready to use)</td>
<td>1.5 ml</td>
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<tr>
<td>4. Positive Control: 1 vial (ready to use)</td>
<td>1.5 ml</td>
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<tr>
<td>5. Negative Control: 1 vial (ready to use)</td>
<td>1.5 ml</td>
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<tr>
<td>6. Enzyme conjugate: 1 bottle (ready to use)</td>
<td>12 ml</td>
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<tr>
<td>7. TMB Substrate: 1 bottle (ready to use)</td>
<td>12 ml</td>
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<tr>
<td>8. Stop Solution: 1 bottle (ready to use)</td>
<td>12 ml</td>
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<tr>
<td>9. Wash concentrate 20X: 1 bottle</td>
<td>25 ml</td>
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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.
4. Do not expose test reagents to heat, sun or strong light.

WARNINGS AND PRECAUTIONS
1. Potential biohazardous materials:
   The calibrator and controls 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, 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. This kit is designed for research use only.
   3. Optimal results will be obtained by strict adherence to the test protocol. Precise pipetting as well as following the exact time and temperature requirements is essential.
   4. Do not pipette by mouth. Do not smoke, eat, or drink in the areas in which specimens or kit reagents are handled.
   5. The components in this kit are intended for use as an integral unit. The components of different lots should not be mixed.
   6. Control sera and sample diluent contain preserved with sodium azide. Sodium azide may react with lead and copper plumbing to form explosive metal azide. On disposal, flush with a large volume of water.

SPECIMEN COLLECTION AND HANDLING
1. Collect blood specimens and separate the serum.
2. Specimens may be refrigerated at 2-8°C for up to seven days or frozen for up to six months. Avoid repetitive freezing and thawing.

REAGENT PREPARATION
Prepare 1X Wash buffer by adding the contents of the bottle (25 ml, 20X) to 475 ml of distilled or deionized water. Store

ASSAY PROCEDURE
Bring all specimens and kit reagents to room temperature (18-26°C) and gently mix.
1. Place the desired number of coated strips into the holder.
2. Negative control, positive control, and calibrator are ready to use. Prepare 1:21 dilution of test samples, by adding
   10 μl of the sample to 200 μl of sample diluent. Mix well.
3. Dispense 100 μl of diluted sera, calibrator and controls into the appropriate wells. For the reagent blank, dispense
   100 μl sample diluent in 1A well position. Tap the holder to remove air bubbles from the liquid and mix well. Incubate for 20 minutes at room temperature.
4. Remove liquid from all wells. Wash wells three times with 300 μl of 1X wash buffer. Blot on absorbance paper or
   paper towel.
5. Dispense 100 μl of enzyme conjugate to each well and incubate for 20 minutes at room temperature. Remove
   enzyme conjugate from all wells. Wash wells three times with 300 μl of 1X wash buffer. Blot on absorbance paper or
   paper towel
6. Dispense 100 μl of TMB substrate and incubate for 10 minutes at room temperature.
7. Add 100 μl of stop solution.
8. Read O.D. at 450 nm using ELISA reader within 15 min. A dual wavelength is recommended with reference filter of
   600-650 nm.

CALCULATION OF RESULTS
1. Check Calibrator Factor (CF) value on the calibrator bottle. This value might vary from lot to lot. Make sure you
   check the value on every lot.
2. Calculate the cut-off value: Calibrator OD x Calibrator Factor (CF).
3. Calculate the Ab (Antibody) Index of each determination by dividing the O.D. value of each sample by cut-off value.
   Example of typical results:
   Calibrator mean OD = 0.8
   Calibrator Factor (CF) = 0.5
   Cut-off Value = 0.8 x 0.5 = 0.400
   Positive control O.D. = 1.2
   Ab Index = 1.2 / 0.4 = 3
   Patient sample O.D. = 1.6
   Ab Index = 1.6 / 0.4 = 4.0

QUALITY CONTROL
The test run may be considered valid provided the following criteria are met:
1. The O.D. of the Calibrator should be greater than 0.250.
2. The Ab index for Negative control should be less than 0.9.
3. The Ab Index for Positive control should be greater than 1.2.

INTERPRETATION
The following is intended as a guide to interpretation of test results; each laboratory is encouraged to establish its own
criteria for test interpretation based on sample populations encountered.

Antibody Index Interpretation
<0.9 No detectable antibody to SSB by ELISA
0.9-1.1 Borderline positive. Follow-up testing is recommended if clinically indicated.
>1.1 Detectable antibody to SSB by ELISA

LIMITATIONS OF THE TEST
1. The test results obtained using this kit are for research use only and are not intended to be used as a part of any
   official diagnosis.
2. Lipemic or hemolyzed samples may cause erroneous results.