RESULTS
Calculate the mean absorbance for each controls and unknown.

Qualitative results:
If the absorbance of the sample is higher than that of the Cut-Off, the sample is positive for the presence of specific IgG. Calculate the ratio between the average OD value of the sample and that of the Cut-Off. The sample is considered:
- Positive: if the ratio is > 1.1.
- Doubtful: if +/- 10% of the Cut-Off.
- Negative: if the ratio is < 0.9.
If the result is doubtful, repeat the test. If it remains doubtful, collect a new serum sample.

LIMITATIONS OF THE PROCEDURE
- A serum sample obtained during the early phase of infection, when only IgM antibodies are present, may be negative by this procedure.
- The test result should be used in conjunction with information available from the evaluation of other clinical and diagnostic procedures.
- Avoid repeated freezing and thawing of reagents and specimens.
- Grossly hemolyzed, icteric or lipemic specimens should be avoided.
- Heat inactivated sera should be avoided.

QUALITY CONTROL
Subtract the value of the blank from all the other readings. The OD values of Cut off control must be at least 0.2. Positive control must have an OD at least 1.5 times that of Cut off control.

PERFORMANCE CHARACTERISTICS
1. Sensitivity and Specificity
80 sera were analyzed by this Syphilis IgG ELISA and a commercial ELISA (Test A) as reference method. Out of 80 samples, 9 were positive for the presence of IgG antibodies to Treponema pallidum by DIAsource Elisa and commercial Elisa showed 10 of them as positive. The results are summarized below.

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th>Negative</th>
<th>FN (false negative)</th>
<th>FP (false positive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
<td>9</td>
<td>71</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Test A</td>
<td>10</td>
<td>70</td>
<td>0</td>
<td>1</td>
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</table>

2. Precision

<table>
<thead>
<tr>
<th>No of Replicates</th>
<th>Serum 1</th>
<th>Serum 2</th>
<th>Serum 3</th>
<th>Mean (OD's)</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>0.75</td>
<td>1.81</td>
<td>0.023</td>
<td>0.89</td>
<td>0.053</td>
<td>9.7</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>0.807</td>
<td>0.963</td>
<td>0.022</td>
<td>0.94</td>
<td>0.054</td>
<td>9.7</td>
</tr>
</tbody>
</table>

REFERENCE

REAGENTS
The DIAsource KAPRSPG16 Syphilis IgG Elisa kit is an Enzyme-Linked Immunosorbent Assay kit providing material for the detection of IgG-class antibodies to Treponema pallidum in human serum. This assay is intended for in vitro use only.

INTENDED USE
The DIAsource KAPRSPG16 Syphilis IgG Elisa is an Enzyme-Linked Immunosorbent Assay kit providing material for the detection of IgG-class antibodies to Treponema pallidum in human serum. This assay is intended for in vitro use only.

SUMMARY AND EXPLANATION
Treponema pallidum is the causative agent of Syphilis, a contagious and infectious systemic disease characterized by periods of active florid manifestations and by years of symptomless latency. Syphilis is traditionally classified as acquired or congenital, each being further subdivided on the basis of the natural course of the disease. In acquired syphilis, infection is usually transmitted by sexual intercourse. The incubation period of syphilis can vary from 1 to 13 weeks, but usually from 3 - 4 weeks. Untreated patients with primary or secondary syphilis having active lesions are the most infectious, and the risk of contagion are greatest during the first 2 years of infection. Virtually every organ and tissue of the body is affected, including most body fluids. Over 80% of patients have mucocutaneous lesions, 50% have generalized enlargement of the lymph nodes, and about 10% have lesions of the eyes, bones and joints, meninges, liver, and spleen. Mild constitutional symptoms of malaise, headache, anorexia, nausea, aching pains in the bones, and fatigability often present. Congential Syphilis is the result of passage of T. pallidum across the placenta. Clinical manifestations may be present at birth but are more often seen at 3 weeks to 6 months of age. Two types of antibodies are produced by T. pallidum: nontreponemal antibodies (nunig) and treponemal antibodies. ELISA for detection of IgG and IgM antibodies is becoming the Gold standard for the diagnosis of syphilis.

PRINCIPLE OF THE TEST
The KAPRSPG16 Syphilis IgG kit is based on the ELISA technique. In the assay, controls and unknowns are incubated in microtiter wells coated with purified and inactivated Treponema pallidum antigen. After incubation and washing, the wells are treated with the conjugate, composed of anti-human IgG antibodies labeled with peroxidase. After a second incubation and washing step, the wells are incubated with the substrate tetramethylbenzidine (TMB). An acidic stopping solution is then added and the degree of enzymatic turnover of the substrate is determined by wavelength absorbance measurement at 450 nm. The absorbance measured is directly proportional to the concentration of anti-Treponema pallidum IgG antibodies present.

REAGENTS
The DIAsource Syphilis IgG ELISA kit contains sufficient reagent for 96 wells. Each kit contains the following reagents:
- Treponema-Antigen-Coated Microtiterisation Strip
- Wash Concentrate
- Sample Diluent
- TMB-Substrate
- Negative control
- Cut off control
- Positive control
- 2nd Antibody Conjugate
- Stopping Solution
MATERIAL NOT PROVIDED

- Microtiteration plate reader capable of absorbance measurement at 450 nm
- Deionized/Distilled water
- Precision pipette to deliver 10 µL, 100 µL, and 1 mL
- Semi-automatic pipette to deliver 100 µL
- Automatic microtiteration plate washer
- Absorbent materials for blotting the strips
- Incubator capable of maintaining temperature at 37 +/- 2°C

Treponema-Antigen-Coated Microtitration Strips
One strip holder containing 12x8 (96) microtitration wells coated with Treponema pallidum antigen. Store at 2-8°C until expiration date. Remove the support and strips to be used from the foil package, and place the unused strips in the resealable pouch with a desiccant pack. The pouch must be resealed to protect from moisture.

Wash Concentrate
One bottle, 100 mL, containing a phosphate buffered saline, concentrated 10-fold containing 0.5% per weight by volume sodium azide as a preservative. Store at 2-8°C until expiration date.

Sample Diluent
One bottle, 100 mL, containing a protein solution with 0.09% sodium azide as a preservative. Store at 2-8°C until expiration date.

Treponema IgG Controls
Three vials, negative, cut off and positive, each 2 mL of human serum in a 0.01 M phosphate buffer with 0.09% sodium azide as a preservative. Store at 2-8°C until expiration date.

2nd Antibody Conjugate
One bottle, 12 mL, containing anti-human IgG monoclonal antibodies labeled with peroxidase, in a phosphate buffer solution with 0.02% Proclin. Store at 2-8°C until expiration date.

TMB-Substrate
One bottle, 12 mL, containing tetramethylbenzidine (TMB) and hydrogen peroxide stabilized in citrate buffer, pH 3.8. Store at 2-8°C until expiration date.

Stopping Solution
One bottle, 15 mL, containing 0.3 M H₂SO₄ in solution. Store at 2-8°C until expiration date.

PRECAUTIONS

For in vitro use
The following universal Good Laboratory Practices should be observed:
- Do not eat, drink, smoke or apply cosmetics where immunodiagnostic material is being handled. Do not pipet by mouth.
- Wear lab coats and disposable gloves when handling immunodiagnostic material. Wash hands thoroughly afterwards.
- Avoid contamination of the TMB Chromogen Solution with the Conjugate. Use a clean disposable pipette tip for each reagent. A void contamination of the TMB and 3-Amino-9-ethylcarbazole (AEC) solutions with the Conjugate.

For in vivo use
- The kit may contain some reagents made with human source material (e.g. serum or plasma) or used in conjunction with human source materials. The material in this kit has been tested by CE marked methods and found to be non-reactive for HIV-1/2 Antibodies, HCV and HBsAg. No available test method can offer complete assurance of eliminating potential biohazardous risk. Handle all reagents and patient samples at a Biosafety Level 2, as recommended for any potentially infectious human material in the Centers for Disease Control/ National Institutes of Health manual "Biosafety in Microbiological and Biomedical Laboratories," 4th Edition, April 1999.

WARNING: POTENTIAL BIOHAZARDOUS MATERIAL
This kit may contain some reagents made with human source material (e.g. serum or plasma) or used in conjunction with human source materials. The material in this kit has been tested by CE marked methods and found to be non-reactive for HIV-1/2 Antibodies, HCV and HBsAg. No available test method can offer complete assurance of eliminating potential biohazardous risk. Handle all reagents and patient samples at a Biosafety Level 2, as recommended for any potentially infectious human material in the Centers for Disease Control/ National Institutes of Health manual "Biosafety in Microbiological and Biomedical Laboratories," 4th Edition, April 1999.

WARNING AND PRECAUTION
Some of the reagents in this kit contain sodium azide as a preservative at concentrations below the regulatory limit of < 0.1%. Although significantly diluted, concentrated sodium azide is an irritant to skin and mucous membranes, and may react with lead and copper plumbing to form explosive metal azides, especially if accumulated. Additionally, TMB and Sulfuric Acid, in concentrated amounts are also irritants to skin and mucous membranes. These substances are in diluted form and therefore may minimize exposure risks significantly but not completely. Provide adequate ventilation. Avoid contact with skin, eyes and clothing. In case of contact with any of these reagents, wash thoroughly with water and seek medical advice. Dispose all nonhazardous reagents by flushing with large volumes of water to prevent buildup of chemical hazards in the plumbing system.

For further information regarding hazardous substances in the kit, please refer to the component specific MSDS by request.

SPECIMEN COLLECTION AND HANDLING
Serum should be used, and the usual precautions for venipuncture should be observed. Specimens may be stored at 2-8°C for 2 days. For longer periods, store at -20°C. Do not use hemolyzed or lipemic specimens. Avoid repeated freezing and thawing of samples.

PREPARATION FOR ASSAY
A thorough understanding of this package insert is necessary for successful use of the product. Reliable results will only be obtained by using precise laboratory techniques and accurately following the package insert. Bring all kit reagents and specimens to room temperature (~25°C) before use. Thoroughly mix the reagents and samples before use by gentle inversion. Do not mix various lots of any kit component within an individual assay. Do not use any component beyond the expiration date shown on its label. Incomplete washing will adversely affect the outcome and assay precision. To minimize potential assay drift due to variation in the substrate incubation time, care should be taken to add the stopping solution into the wells in the order and speed to add the TMB Chromogen Solution. A void microbial contamination of reagents, especially of the conjugate, wash buffer and diluent. A void contamination of the TMB Chromogen Solution with the Conjugate. Use a clean disposable pipette tip for each reagent. A void contamination of the TMB and 3-Amino-9-ethylcarbazole (AEC) solutions with the Conjugate.

PREPARATION OF REAGENTS
Wash Solution
Dilute 1:10 with deionized/distilled water prior to use. If crystals are present, they should be dissolved at 37°C before dilution. Pour 100 mL of the Wash Concentrate into a clean container and dilute by adding 900 mL of deionized/distilled water. Mix thoroughly. The wash solution is stable for 5 days at room temperature and 2 weeks at 2-8°C when stored in a tightly sealed bottle.

Microtitration Strips
Select the number of coated strips required for the assay. The remaining unused wells should be placed in the resealable pouch with a desiccant pack. The pouch must be resealed to protect from moisture.

ASSAY PROCEDURE
All specimens and reagents to reach room temperature (~25°C) before use. Serum Samples and Controls should be assayed in duplicate.

1. Mark the microtitration strips to be used.
2. Dilute serum samples 1:101 distributing 10 µL of serum into 1 mL of Sample Diluent.
3. Pipette 100 µL of each diluted serum sample and ready to use controls to the appropriate wells. Leave one well for the blank, performed using 100 µL of the TMB-substrate at the substrate incubation step.
4. Incubate for 45 minutes at 37°C.
5. Aspirate and wash each well four (4) times for 30 seconds with Washing Solution using an automatic microplate washer or manually using a dispenser. Blot and dry by inverting plate on absorbent material.
6. Add 100 µL of Enzyme-Labeled 2nd Antibody Conjugate into each well.
7. Incubate for 45 minutes at 37°C.
8. Aspirate and wash each well four times for 30 seconds with Washing Solution using an automatic microplate washer or manually using a dispenser. Blot and dry by inverting plate on absorbent material.
9. Add 100 µL of TMB Chromogen Solution to each well using a dispenser.
10. Aspirate and wash each well four times for 30 seconds with Washing Solution using an automatic microplate washer or manually using a dispenser. Blot and dry by inverting plate on absorbent material.
11. Add 100 µL of TMB Chromogen Solution to each well using a dispenser.
12. Incubate for 15 minutes at room temperature. Avoid exposure to direct sunlight.
13. Add 100 µL of Stopping Solution to each well using a dispenser.
14. Read the absorbance of the solution in the wells within 30 minutes, using a microplate reader set to 450 nm. If wavelength correction is available, set the instrument to dual wavelength measurement at 450 nm with background wavelength correction set at 600 or 620 nm.
<table>
<thead>
<tr>
<th>Consultant instructions for use</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage temperature</td>
<td>Contains sufficient for n tests</td>
</tr>
<tr>
<td>Use by</td>
<td>In vitro diagnostic medical device</td>
</tr>
<tr>
<td>Batch code</td>
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