

Syphilis IgG Antibodies by Immunoblot

FOR THE QUALITATIVE DETECTION OF ANTI-TREPONEMA PALLIDUM ANTIBODIES

Test Highlights

The Syphilis IgG immunoblot assay is an additional antibody detection assay that may provide further information to clinicians when diagnosing syphilis.

Disease Overview

- Syphilis is a disease caused by the spirochete *Treponema pallidum* that is transmitted through sexual intercourse, but also congenitally through an infected mother.
- The disease follows a well-defined clinical course as it progresses through primary, secondary, latent, and tertiary disease.
- If left untreated, syphilis can cause neurological complications and death.
- Traditional syphilis testing includes a nontreponemal-based screening test and a treponemal-based confirmatory assay.

Indications for Ordering

- This test should be ordered if exposure to *T. pallidum* is suspected and syphilis symptoms exist. It can be used as a supplemental treponemal-based assay, especially in cases where FTA-ABS results are inconclusive. However, it should not be ordered as a single test to confirm syphilis.

Methodology

- The assay utilizes the *T. pallidum* specific proteins p47, p44.5, p17, and p15.
- Specific antibodies bind to the fixed antigen on the strip during serum incubation.
- Conjugate binds to this antigen-antibody complex during the conjugate incubation. The conjugate converts the substrate and stains the antigen-antibody complex on the strip with a purple color.
- A positive test is determined if two or more antigen bands react with an intensity equal to or greater than the cutoff band present on each strip.

Interpretation

A positive test indicates that IgG antibodies are present against *T. pallidum*.

Limitations

- This test has been validated for serum and plasma samples only; no other sample types may be used.
- As with all serological assays for syphilis, interpretation of results must be used in conjunction with the patient's clinical symptoms, medical history, and other clinical and/or laboratory findings.
- All treponemal assays tend to remain reactive following treponemal infection; therefore, they should not be used to evaluate response to therapy.
- Because of the persistence of reactivity, likely for the life of the patient, treponemal assays are of no value to the clinician in determining relapse or reinfection in a patient who has had a previously positive result.
- The assay may be reactive in persons from areas where yaws or pinta was or is endemic.

References

1. Mandell, G., Bennett, JE, Dolin, R. 2004. *Principles and Practice of Infectious Diseases*, 6th ed. Philadelphia:Churchill Livingstone.
2. Egglestone SI and Turner AJ. Serological diagnosis of syphilis. PHLS Syphilis Serology Working Group. *Commun Dis Public Health* 2000;3:158–62.
3. Centers for Disease Control and Prevention (CDC). Syphilis testing algorithms using treponemal tests for initial screening—four laboratories, New York City, 2005–2006. *MMWR Morb Mortal Wkly Rep* 2008;57:872–5.
4. Welch RJ, Litwin CM. Evaluation of two immunoblot assays and a Western blot assay for the detection of antisyphilis immunoglobulin g antibodies. *Clin Vaccine Immunol* 2010;17(1):183–4.

Test Information

2003095

Treponema pallidum Antibody, IgG by Immunoblot

For specific collection, transport, and testing information, refer to the ARUP website at www.aruplab.com.

For information on test selection, ordering, and interpretation, refer to ARUP Consult[®] at www.arupconsult.com.