Overview

Useful For
Aids in the clinical diagnosis of chlamydial infections

Testing Algorithm
Includes *Chlamydia pneumoniae*, *Chlamydia psittaci*, and *Chlamydia trachomatis*.

Method Name
Micro-Immunofluorescent Antibody (MIF) Assay

NY State Available
Yes

Specimen

Specimen Type
Serum

Advisory Information
This test is not intended for medical-legal use.

Specimen Required

Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 0.2 mL

Forms
If not ordering electronically, complete, print, and send a Microbiology Test Request (T244) with the specimen.

Specimen Minimum Volume
0.15 mL

Reject Due To

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>Reject</th>
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<tbody>
<tr>
<td>Gross lipemia</td>
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Specimen Stability Information

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<tr>
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Clinical and Interpretive

Clinical Information

Members of the family Chlamydiaceae are small, nonmotile, gram-negative, obligate intracellular organisms that grow in the cytoplasm of host cells. Two genera of clinical importance are Chlamydia, which includes Chlamydia trachomatis, and Chlamydophila, which includes Chlamydophila pneumoniae and Chlamydophila psittaci. These organisms share many features of bacteria and are susceptible to antibiotic therapy. They are also similar to viruses, requiring living cells for multiplication.

The chlamydial life cycle can be divided into 2 distinct phases: an extracellular, nonreplicating, infectious stage and an obligate intracellular, replicating, noninfectious stage. The infectious form, or elementary body (EB), attaches to the target cell membrane and enters the cell via a phagosome. After cell entry, the EB reorganizes into reticulate particles (forming inclusion bodies) and binary fission begins. After 18 to 24 hours, reticulate particles condense to form EBs. These new EBs are released, beginning another infection cycle.

Chlamydophila psittaci is the causative agent of psittacosis, a disease characterized by pneumonia, headache, altered mentation, and hepatosplenomegaly. Psittacosis is acquired by airborne transmission from infected birds.

Chlamydophila pneumoniae (formerly known as TWAR and, more recently, as Chlamydia pneumoniae) causes pneumonia in humans. It is unique because it is a primary pathogen of humans, is spread from human to human, and apparently has no animal or bird host. Chlamydophila pneumoniae is responsible for approximately 10% of pneumonia cases.

Chlamydia trachomatis has been implicated in a wide variety of infections in humans. It is a common cause of nongonococcal urethritis and cervicitis, and many systemic complications of chlamydial infections have been described. In females, this organism is a cause of pelvic inflammatory disease, salpingitis, and endometritis. In males, epididymitis and Reiter syndrome occur. Lymphogranuloma venereum is a sexually transmitted infection caused by Chlamydia trachomatis. It presents with a transient primary genital lesion followed by suppurative regional lymphadenopathy. Occasionally, severe proctitis or proctocolitis may develop. Chlamydia trachomatis also causes ophthalmologic infections, such as trachoma (rare in the United States), adult inclusion conjunctivitis and inclusion conjunctivitis in neonates. These disorders have traditionally been diagnosed by cytologic detection or culture. However, molecular detection methods (CTRNA / Chlamydia trachomatis by Nucleic Acid Amplification [GEN-PROBE]) may now represent a more sensitive diagnostic approach.

Fitz-Hugh-Curtis syndrome (perihepatitis) has been associated with chlamydiae.

Reference Values

Chlamydophila pneumoniae

IgG: <1:64
IgM: <1:10

Chlamydophila psittaci

IgG: <1:64
IgM: <1:10
**Chlamydia trachomatis**

IgG: <1:64

IgM: <1:10

**Interpretation**

**IgG:**

*Chlamydia pneumoniae*

> or =1:512

IgG endpoint titers of > or =1:512 are considered presumptive evidence of current infection.

<1:512 and > or =1:64

A single specimen endpoint titer of > or =1:64 and <1:512 should be considered evidence of infection at an undetermined time. A second specimen drawn 10 to 21 days after the original draw should be tested in parallel with the first. If the second specimen exhibits a titer > or =1:512 or a 4-fold increase over that of the initial specimen, current (acute) infection is indicated. Unchanging titers >1:64 and <1:512 suggest past infection.

<1:64

IgG endpoint titers <1:64 suggest that the patient does not have a current infection. These antibody levels may be found in patients with either no history of chlamydial infection or those with past infection whose antibody levels have dropped below detectable levels.

*Chlamydia pneumoniae* antibody is detectable in 25% to 45% of adults tested.

*Chlamydia psittaci* and *Chlamydia trachomatis*

> or =1:64

IgG endpoint titers of > or =1:64 are considered presumptive evidence of current infection.

<1:64

IgG endpoint titers <1:64 suggest that the patient does not have a current infection. These antibody levels may be found in patients with either no history of chlamydial infection or those with past infection whose antibody levels have dropped below detectable levels.

**IgM**

*Chlamydia pneumoniae, Chlamydia psittaci, and Chlamydia trachomatis*

> or =1:10

IgM endpoint titers of > or = 1:10 are considered presumptive evidence of infection.

<1:10
IgM endpoint titers <1:10 suggest that the patient does not have a current infection. These antibody levels may be found in patients with either no history of chlamydial infection or those with past infection whose antibody levels have dropped below detectable levels.

Cautions

Antichlamydial IgG can persist for years. All results from chlamydial serologies must correlate with clinical history and other data available to the physician.

Specimens drawn too early during primary infection may not contain detectable antibodies. If chlamydial infection is suspected, a second specimen should be drawn 10 to 21 days later and tested in parallel with the original specimen.

During a primary Chlamydia infection, the early antibody response may be cross-reactive with multiple Chlamydia species.

The Chlamydia microimmunofluorescent antibody assay utilizes serotypes D-K of Chlamydia trachomatis. Sera from suspected cases of lymphogranuloma venereum (LGV) should be tested by the Lymphogranuloma Venereum Differentiation Antibody Panel, MIF. LGV testing is not performed by Mayo Clinic Laboratories; call 800-533-1710 for further assistance.

Due to the limited sensitivity and specificity of Chlamydia serologic tests, patients with suspected Chlamydia trachomatis infection should be tested by a molecular method (eg, CTRNA / Chlamydia trachomatis by Nucleic Acid Amplification [GEN-PROBE]) when clinical manifestations are present.

Clinical Reference


Performance

Method Description

The microimmunofluorescent antibody assay is a 2-stage "sandwich" procedure. In the first stage, the patient serum is diluted in phosphate-buffered saline, added to appropriate slide wells in contact with the substrate, and incubated. After incubation, the slide is washed in buffered saline to remove unbound serum antibodies. In the second stage, each antigen well is overlaid with fluorescein-labeled antibody to IgG or IgM. The slide is incubated, allowing antigen-antibody complexes to react with the fluorescein-labeled anti-IgG. After the slide is washed, dried, and mounted, it is examined using fluorescence microscopy. Positive reactions appear as bright apple-green fluorescent elementary bodies with a background matrix of yolk sac. Semiquantitative endpoint titers are obtained by testing serial dilutions of positive specimens.(Schachter J: Chlamydiae [Psittacosis-Lymphogranuloma Venereum-Trachoma Group]. In Manual of Clinical Microbiology. Fourth edition. Edited by E Lennette, A Balows, W Hausler, H Shadomy. Washington, DC, ASM Press, 1985, pp 856-861; Smith T: Chlamydia. In Diagnostic Procedures for Viral, Rickettsial and Chlamydial Infections. Sixth edition. Edited by N Schmidt, R Emmons. Washington DC, APHA, 1989, pp 1165-1198)

PDF Report

No
Day(s) and Time(s) Test Performed
Monday through Friday; 9 a.m.

Analytic Time
Same day/1 day

Maximum Laboratory Time
4 days

Specimen Retention Time
14 days

Performing Laboratory Location
Rochester

Fees and Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information
86631 x 3-IgG

86632 x 3-IgM

LOINC® Information

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