MAYO CLINIC LABORATORIES

Test Definition: CHLM

Chlamydia IgM, Immunofluorescence, Serum

Overview

Useful For

Assessing IgM antibody levels to aid in the clinical diagnosis of *Chlamydia pneumoniae* or *Chlamydia psittaci* infections

Testing Algorithm

This test includes testing for *Chlamydia pneumoniae* IgM, and *Chlamydia psittaci* IgM

Method Name

Micro-Immunofluorescent Antibody (MIF) Assay

NY State Available

Yes

Specimen

Specimen Type

Serum

Ordering Guidance

For suspected *Chlamydia trachomatis* infection, order either CTRNA / *Chlamydia trachomatis*, Nucleic Acid Amplification, Varies or CGRNA / *Chlamydia trachomatis* and *Neisseria gonorrhoeae*, Nucleic Acid Amplification, Varies.

Specimen Required

Collection Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Submission Container/Tube: Plastic vial

Specimen Volume: 0.3 mL

Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Specimen Minimum Volume

0.15 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject
Heat-inactivated specimen	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	30 days	
	Frozen	30 days	

Clinical & Interpretive

Clinical Information

Members of the family Chlamydiaceae are small, nonmotile, gram-negative, obligate intracellular organisms that grow in the cytoplasm of host cells. While there are at least 9 species within the *Chlamydia* genus, 3 are clinically significant, including *Chlamydia trachomatis*, *Chlamydia pneumoniae,* and *Chlamydia psittaci.*

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.

C 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.

C pneumoniae (formerly known as Taiwan acute respiratory agent and, more recently, as *Chlamydophila 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. *C pneumoniae* is responsible for approximately 10% of pneumonia cases.

Reference Values

Chlamydia pneumoniae
<1:10

Chlamydia psittaci
<1:10

Interpretation

Chlamydia pneumoniae, and Chlamydia psittaci
> or =1:10
IgM endpoint titers of 1:10 or more are considered presumptive evidence of infection.

<1:10
IgM endpoint titers below 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

Specimens collected too early during primary infection may not contain detectable antibodies. If chlamydial infection is suspected, a second specimen should be collected 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.

This assay does not report antibodies detected against *Chlamydia trachomatis*. Sera from suspected cases of lymphogranuloma venereum (LGV) should be tested by a Lymphogranuloma Venereum Differentiation Antibody Panel. LGV testing is not performed by Mayo Clinic Laboratories; call 800-533-1710 for assistance with ordering.

Due to the limited sensitivity and specificity of *Chlamydia* serologic tests, patients with suspected *C trachomatis* infection should be tested by a molecular method (eg, CTRNA / *Chlamydia trachomatis,* Nucleic Acid Amplification, Varies or CGRNA / *Chlamydia trachomatis* and *Neisseria gonorrhoeae,* Nucleic Acid Amplification, Varies) to evaluate for current/active infection.

Clinical Reference

1. Schlossberg D. Psittacosis (due to *Chlamydia psittaci*). In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:2320-2322
2. Hammerschlag MR, Kohlhoff SA, Gaydos CA. *Chlamydia pneumoniae*. In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:2323-2331

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 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-Trachome Group]. In: Lennette E, Balows A, Hausler W, Shadomy H, eds. Manual of Clinical Microbiology. 4th ed. ASM Press; 1985: 856-861; Smith T. *Chlamydia*. In: Schmidt N, Emmons R, eds. Diagnostic procedures for viral, rickettsial and chlamydial infections. 6th ed. APHA; 1989: 1165-1198)

PDF Report

No

Day(s) Performed

Monday

Report Available

Same day/1 to 4 days

Specimen Retention Time

14 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Superior Drive

Fees & 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 account representative. 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. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

86632 x 2

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CHLM	Chlamydia IgM, IFA, S	10849-8

Result ID	Test Result Name	Result LOINC® Value
619390	C. pneumoniae IgM	In Process
619391	C. psittaci IgM	In Process