MAYO CLINIC LABORATORIES

Test Definition: CHLAP

Chlamydia IgM and IgG Panel, Immunofluorescence, Serum

Overview

Useful For

Aiding in the clinical diagnosis of *Chlamydia pneumoniae* or *Chlamydia psittaci* infection

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
CHLG	Chlamydia IgG, IFA, S	Yes	Yes
CHLM	Chlamydia IgM, IFA, S	Yes	Yes

Highlights

This test includes testing for *Chlamydia pneumoniae* and *Chlamydia psittaci.*

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

Forms

If not ordering electronically, complete, print, and send an Infectious Disease Serology Test Request (T916) with the specimen.

Specimen Minimum Volume

0.3 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
IgM: <1:10
IgG: <1:64

Chlamydia psittaci
IgM: <1:10
IgG: <1:64

Interpretation

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

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

<1:64
IgG endpoint titers below 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.

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

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

<1:64
IgG endpoint titers below 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.

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 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.

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 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-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

Test Definition: CHLAP

Chlamydia IgM and IgG Panel, Immunofluorescence, Serum

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
86631 x 2

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CHLAP	Chlamydia IgM/IgG Panel, IFA, S	77166-7

Result ID	Test Result Name	Result LOINC® Value
619392	C. pneumoniae IgG	In Process
619393	C. psittaci IgG	In Process
619390	C. pneumoniae IgM	In Process
619391	C. psittaci IgM	In Process