Test Definition: MYCO
M. pneumoniae Ab, IgG and IgM, S

Overview

Useful For
Screening for recent or past exposure to *Mycoplasma pneumoniae*

Profile Information

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Reporting Name</th>
<th>Available Separately</th>
<th>Always Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>MYCOG</td>
<td>M. pneumoniae Ab, IgG, S</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>MYCOM</td>
<td>M. pneumoniae Ab, IgM, S</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>MYCON</td>
<td>M. pneumoniae Ab Interpretation</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Reflex Tests

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Reporting Name</th>
<th>Available Separately</th>
<th>Always Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMYCO</td>
<td>M. pneumoniae Ab, IgM, S by IFA</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Testing Algorithm
If *Mycoplasma pneumoniae*, IgM is reactive or equivocal, then *M pneumoniae* IgM by IFA will be performed at an additional charge.

Method Name
**MYCOG, MYCOM: Enzyme Immunoassay (EIA)**

MMYCO: Indirect Immunofluorescence Assay (IFA)

NY State Available
Yes

Specimen

Specimen Type
Serum

Advisory Information
Detection of IgM or IgG class antibodies to *Mycoplasma pneumoniae* provides exposure information. The preferred method of diagnosis of acute *M pneumoniae* infection is by molecular detection: MPRP / *Mycoplasma pneumoniae*, Molecular Detection, PCR.

Specimen Required
**Collection Container/Tube:**
Test Definition: MYCO
M. pneumoniae Ab, IgG and IgM, S

Preferred: Serum gel
Acceptable: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL

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

Specimen Minimum Volume
0.5 mL

Reject Due To

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemolysis</td>
<td>Mild reject; Gross reject</td>
</tr>
<tr>
<td>Lipemia</td>
<td>Mild reject; Gross reject</td>
</tr>
<tr>
<td>Icterus</td>
<td>NA</td>
</tr>
<tr>
<td>Other</td>
<td>Heat inactivated</td>
</tr>
</tbody>
</table>

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>14 days</td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>14 days</td>
</tr>
</tbody>
</table>

Clinical and Interpretive

Clinical Information

*Mycoplasma pneumoniae* is a small bacterium transmitted via organism-containing droplets. It is a cause of upper respiratory infection, pharyngitis, and tracheobronchitis, particularly in children, and has been associated with approximately 20% of cases of community-acquired pneumonia. Central nervous system and cardiac manifestations are probably the most frequent extrapulmonary complications of infections due to *M pneumoniae*. The disease is usually self-limited, although severe disease has been reported in immunocompromised patients.

Identification of *M pneumoniae* by culture-based methods is time consuming and insensitive. Serology-based assays for *M pneumoniae* have several drawbacks. The development of IgM antibodies takes approximately 1 week and the IgM response in adults may be variable or it may be decreased in immunosuppressed individuals. Confirmation of the disease is dependent on the observation of a 4-fold rise in IgG antibody titers between acute and convalescent specimens, several weeks following the initial onset of illness, providing clinical utility only for retrospective testing. Real-time PCR offers a rapid and sensitive option for detection of *M pneumoniae* DNA from clinical specimens allows for diagnosis of acute or current infection.

Reference Values

IgG: negative
IgM: negative

IgM by IFA: negative

### Interpretation

<table>
<thead>
<tr>
<th>IgG ELISA Result</th>
<th>IgM ELISA Result</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Negative</td>
<td>Results suggest past exposure.</td>
</tr>
<tr>
<td>Positive</td>
<td>Reactive</td>
<td>Prior exposure to <em>M. pneumoniae</em> detected. Confirmatory testing for IgM to <em>M. pneumonia</em> will be performed by an immunofluorescence assay.</td>
</tr>
<tr>
<td>Positive</td>
<td>Equivocal</td>
<td>Prior exposure to <em>M. pneumoniae</em> detected. Confirmatory testing for IgM to <em>M. pneumonia</em> will be performed by an immunofluorescence assay.</td>
</tr>
<tr>
<td>Negative</td>
<td>Negative</td>
<td>No antibodies to <em>M. pneumoniae</em> detected. Acute infection cannot be ruled out as antibody levels may be below the limit of detection. If clinically indicated, a second serum should be submitted in 14 to 21 days.</td>
</tr>
<tr>
<td>Negative</td>
<td>Reactive</td>
<td>No prior exposure to <em>Mycoplasma pneumoniae</em>. Confirmatory testing for IgM to <em>M. pneumonia</em> will be performed by an immunofluorescence assay.</td>
</tr>
<tr>
<td>Negative</td>
<td>Equivocal</td>
<td>No prior exposure to <em>Mycoplasma pneumoniae</em>. Confirmatory testing for IgM to <em>M. pneumonia</em> will be performed by an immunofluorescence assay.</td>
</tr>
<tr>
<td>Equivocal</td>
<td>Negative</td>
<td>Recommend follow-up testing in 10 to 14 days if clinically indicated.</td>
</tr>
<tr>
<td>Equivocal</td>
<td>Reactive</td>
<td>Confirmatory testing for IgM to <em>M. pneumoniae</em> will be performed by an immunofluorescence assay.</td>
</tr>
<tr>
<td>Equivocal</td>
<td>Equivocal</td>
<td>Confirmatory testing for IgM to <em>M. pneumoniae</em> will be performed by an immunofluorescence assay.</td>
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### Cautions

A diagnosis of *Mycoplasma pneumoniae* infection should not be solely based on results of serologic testing for this agent. Test results should be interpreted in conjunction with clinical evaluation and the results of other diagnostic procedures (eg, molecular detection).

The continued presence or absence of antibodies cannot be used to determine the success or failure of therapy.

Testing should not be performed as a screening procedure for the general population. Testing should only be done when clinical evidence suggests the diagnosis of *M. pneumoniae*-associated disease.

The performance of this test has not been established on neonates and immunocompromised patients.

Performance of the IgM assay has not been tested with specimens known to be positive for antibodies to organisms that are known to be associated with lower respiratory illness (ie, influenza A and B, cytomegalovirus, *Chlamydophila pneumoniae*, parainfluenza), and closely related serovars known to cross-react with *M. pneumoniae*, such as *M. genitalium* and *M. hominis*, as well as various *Ureaplasma* species. Cross-reactivity studies with such organisms have not been performed with this assay.

The IgG removal system included with the IgM test system has been shown to functionally remove the IgG from specimens containing total IgG levels ranging from 300 to 600 mg/mL. The effectiveness of this removal system at
IgG levels exceeding 600 mg/mL has not been established.

Clinical Reference

Performance

Method Description

IgG:

Diluted sera are incubated in antigen-coated microwells. Any antigen-specific antibody in the samples will bind to the immobilized antigen. The plate is washed to remove unbound antibody and other serum components. Peroxidase conjugated goat-antihuman IgG is added to the wells and incubated. The conjugate will react with the IgG antibody/antigen on the solid phase. The wells are washed to remove unreacted conjugate. The microwells containing immobilized conjugate are incubated with peroxidase substrate solution. Hydrolysis of the substrate by peroxidase produces a color change. After a period of time the reaction is stopped by the addition of diluted acid, and the color changes are measured photometrically. The color intensity of the solution depends on the antibody concentration in the serum sample.(Package insert: *M pneumoniae* IgG Test System. Zeus Scientific Inc., Branchburg, NJ. Revision Date 3/22/2016)

IgM EIA:

Test sera are diluted with the sample diluent provided. The sample diluent contains antihuman IgG that precipitates and removes IgG and rheumatoid factor from the sample, leaving IgM free to react with immobilized antigen. Diluted sera are incubated in antigen-coated microwells. Any antigen-specific antibody in the samples will bind to the immobilized antigen. The plate is washed to remove unbound antibody and other serum components. Peroxidase-conjugated goat-antihuman IgM (chain specific) is added to the wells and incubated. The conjugate will react with the IgM antibody/antigen on the solid phase. The wells are washed to remove unbound conjugate. The microwells containing immobilized conjugate are incubated with peroxidase substrate solution. Hydrolysis of the substrate by peroxidase produces a color change. After a period of time the reaction is stopped by the addition of diluted acid, and the color changes are measured photometrically. The color intensity of the solution depends on the antibody concentration in the serum sample.(Package insert: *M pneumoniae* IgM Test System. Zeus Scientific, Inc., Branchburg, NJ. Revision Date 9/22/2016)

IgM Immunofluorescence Assay (IFA):

*Mycoplasma pneumoniae* antigenic substrate is fixed onto microscope slide wells. Serum that has been pretreated to remove IgG antibodies is incubated with the substrate. If IgM antibody to *M pneumoniae* is present, it will bind to the substrate. Fluorescein-labeled antihuman-IgM conjugate is added to the slide wells and the slide is incubated. If antibody is present, it can be observed as a characteristic positive, bright, apple-green fluorescent reaction when the slide is read on a fluorescence microscope.(Package insert: *Mycoplasma pneumoniae* IgM IFA Antibody Test System. Zeus Scientific, Inc., Raritan, NJ 2004)

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Friday; 9 a.m.

Analytic Time
Test Definition: MYCO
M. pneumoniae Ab, IgG and IgM, S

Same day/1 day

Maximum Laboratory Time
3 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 has been modified from the manufacturer’s instructions. Its performance characteristics were 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
86738 x 2-Mycoplasma pneumoniae by EIA
86738-Mycoplasma pneumoniae by indirect IFA (if appropriate)

LOINC® Information

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>MYCO</td>
<td>M. pneumoniae Ab, IgG and IgM, S</td>
<td>In Process</td>
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<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
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<tbody>
<tr>
<td>MYCOG</td>
<td>M. pneumoniae Ab, IgG, S</td>
<td>45224-3</td>
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<tr>
<td>MYCOM</td>
<td>M. pneumoniae Ab, IgM, S</td>
<td>5257-1</td>
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<tr>
<td>MYCON</td>
<td>M. pneumoniae Ab Interpretation</td>
<td>69048-7</td>
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