Overview

Useful For
Diagnosis of *Bartonella* infection, especially in the context of a cat scratch

Highlights
This assay can be used as an aid to diagnose recent or past infection with *Bartonella henselae* or *Bartonella quintana*.

Testing Algorithm
See *Infective Endocarditis: Diagnostic Testing for Identification of Microbiological Etiology* in Special Instructions.

Special Instructions
- *Infective Endocarditis: Diagnostic Testing for Identification of Microbiological Etiology*

Method Name
Immunofluorescence Assay (IFA)

NY State Available
Yes

Specimen

Specimen Type
Serum

Specimen Required
**Container/Tube:**

Preferred: Serum gel
Acceptable: Red top

Specimen Volume: 0.5 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>
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<tr>
<th>Condition</th>
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<tbody>
<tr>
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<td>Reject</td>
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<tr>
<td>Gross lipemia</td>
<td>Reject</td>
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Specimen Stability Information
Test Definition: BART
Bartonella Ab Panel, IgG and IgM

<table>
<thead>
<tr>
<th>Specimen Type</th>
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<th>Time</th>
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<tbody>
<tr>
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<tr>
<td></td>
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Clinical and Interpretive

Clinical Information

*Bartonella henselae* and *Bartonella quintana* are small, rod-shaped, pleomorphic, Gram-negative bacteria. The human body louse (*Pediculus humanis*) is the proposed vector for *B quintana*. No animal reservoir has been determined for *B quintana*. The domestic cat is believed to be both a reservoir and vector for *B henselae*. Cats may infect humans directly through scratches, bites, or licks; or indirectly through an arthropod vector. Humans remain the only host in which *Bartonella* infection leads to significant disease.

The sight of entry for *Bartonella* is through openings in the skin. Microscopically, *Bartonella* lesions appear as rounded aggregates that proliferate rapidly. These aggregates are masses of *Bartonella* bacteria. Warthin-Starry staining has shown that *Bartonella* organisms can be present within the vacuoles of endothelial cells, in macrophages, and between cells in areas of necrosis. Occasionally organisms are seen in the lumens of vessels. While cutaneous lesions are common, disseminated tissue infection by *Bartonella* has been seen in the blood, lymph nodes, spleen, liver, bone marrow, and heart. *B henselae* has been associated with cat scratch disease (CSD), peliosis hepatitis (PH), bacillary angiomatosis (BA), and endocarditis. *B quintana* has been associated with trench fever, BA, and endocarditis. BA is a vascular proliferative disease usually involving the skin and regional lymph nodes.

CSD begins as a cutaneous papule or pustule that usually develops within a week after an animal contact. Regional lymphadenopathy follows and is the predominant clinical feature of CSD. Trench fever, which was a significant problem during World War I and World War II, is characterized by a relapsing fever and severe pain in the shins. PH and febrile bacteremia syndrome are both syndromes that have afflicted patients with AIDS and patients who are immunocompromised. While trench fever and CSD are usually self-limiting illnesses, the other *Bartonella*-associated diseases can be life-threatening.

Interest in *B quintana* and *B henselae* has recently increased since its increased prevalence in patients with AIDS, in transplant patients, and those with suppressed immunity.

Reference Values

*Bartonella henselae*

IgG: <1:128

IgM: <1:20

*Bartonella quintana*

IgG: <1:128

IgM: <1:20

Interpretation

A positive immunofluorescence assay (IFA) IgM (titer >1:20) suggests a current infection with either *Bartonella*...
Test Definition: BART
Bartonella Ab Panel, IgG and IgM

* henselae or B quintana. 

A positive IgG (titer >1:128) suggests a current or previous infection. Increases in IgG titers in serial specimens suggest active infection.

Normal serum specimens usually have an IgG titer of less than 1:128. However, 5% to 10% of healthy controls exhibit a *B henselae* and *B quintana* titer of 1:128. Sera from healthy volunteers rarely show titers of 1:256 or greater. IgM titers in normal serum are typically less than 1:20. IgM titers at 1:20 or greater have not been seen in the normal population.

Molecular testing of tissue for Bartonella species nucleic acid is recommended in cases of suspected endocarditis.

**Cautions**

IgG cross-reactivity between *Bartonella henselae* and *B quintana* has been reported. However, the infecting species will usually have the higher titer.

A negative IgM result does not rule out infection.

Significant cross-reactions have been reported between Bartonella species and Chlamydia species.

**Clinical Reference**


**Performance**

**Method Description**

The Euroimmun indirect immunofluorescence test is a standardized in vitro assay for the determination of specific antibodies against *Bartonella henselae* and *B quintana*. BIOCHIP Mosaics are coated with *B henselae* and *B quintana* infected cells positioned next to each other in one reaction field. Samples are diluted and incubated on the substrate slides. If the reaction is positive, specific antibodies of class IgG and IgM attach to the antigens. In a second step, the attached antibodies are stained with fluorescein-labeled anti-human antibodies and made visible using fluorescence microscopy. Semi quantitative endpoint titers are obtained by testing serial dilutions of positive specimens.(General instructions for Euroimmun indirect immunofluorescence tests version 1/31/2017; IIFT Bartonella henselae/Bartonella quintana (IgM) Instructions for the indirect immunofluorescence test. Version 7/18/2017).

**PDF Report**

No

**Day(s) and Time(s) Test Performed**

Monday through Saturday; 9 a.m.

**Analytic Time**

Same day/1 day

**Maximum Laboratory Time**

3 days
Test Definition: BART
Bartonella Ab Panel, IgG and IgM

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
86611 x 4

LOINC® Information

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