MAYO CLINIC LABORATORIES

Test Definition: BARTB

Bartonella, Molecular Detection, PCR, Blood

Overview

Useful For

Aiding in the diagnosis of *Bartonella* infection when *Bartonella* DNA is expected to be present in blood, especially endocarditis

Testing Algorithm

For information see Infective Endocarditis: Diagnostic Testing for Identification of Microbiological Etiology.

Special Instructions

- Infective Endocarditis: Diagnostic Testing for Identification of Microbiological Etiology

Method Name

Real-Time Polymerase Chain Reaction (PCR)

NY State Available

Yes

Specimen

Specimen Type

Whole Blood EDTA

Ordering Guidance

If this test result is negative and there is a strong suspicion of disease caused by these organisms, consider BART / *Bartonella* Antibody Panel, IgG and IgM, Serum and Warthin-Starry tissue stain (PATHC / Pathology Consultation) testing.

Specimen Required

The high sensitivity of amplification by polymerase chain reaction requires the specimen to be processed in an environment in which contamination of the specimen by *Bartonella* species DNA is unlikely.

Container/Tube:
Preferred: Lavender top (EDTA)
Acceptable: Royal blue top (EDTA), pink top (EDTA), or sterile vial containing EDTA-derived aliquot
Specimen Volume: 1 mL
Collection Instructions: Send whole blood specimen in original tube (preferred).

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

Bone marrow	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood EDTA	Refrigerated (preferred)	7 days	
	Ambient	7 days	
	Frozen	7 days	

Clinical & Interpretive

Clinical Information

Bartonella henselae and *Bartonella quintana* are small, pleomorphic, gram-negative bacilli that are difficult to isolate by culture due to their fastidious growth requirements. *B henselae* has been associated with cat scratch disease, bacillary angiomatosis, peliosis hepatitis, and endocarditis. *B quintana* has been associated with trench fever, bacillary angiomatosis, and endocarditis.

The diagnosis of *Bartonella* infection has traditionally been made by Warthin-Starry staining of infected tissue or serology. However, these methods may be nonspecific or falsely negative, especially in the early stages of disease.

An effective tool for diagnosing *Bartonella* infection is evaluation of infected tissue or blood using a polymerase chain reaction (PCR) assay. Mayo Clinic Laboratories has developed a real-time PCR test that permits rapid identification of *Bartonella* species. The assay targets a unique sequence of the citrate synthase (*gltA)* gene present in *Bartonella* species.

Reference Values

Not applicable

Interpretation

A positive result indicates the presence of *Bartonella* DNA.

A negative result indicates the absence of detectable *Bartonella* DNA but does not negate the presence of the organism and may occur due to inhibition of polymerase chain reaction, sequence variability underlying primers or probes, or the presence of *Bartonella* DNA in quantities less than the limit of detection of the assay.

Cautions

This test does not differentiate between *Bartonella henselae* and *Bartonella quintana*.

Test results should be used as an aid in diagnosis. The single assay should not be used as the only criteria to form a clinical conclusion, but results should be correlated with patient symptoms and clinical presentation. A negative result does not negate the presence of the organism or active disease.

Clinical Reference

1. Liesman RM, Pritt BS, Maleszewski JJ, Patel R. Laboratory diagnosis of infective endocarditis. J Clin Microbiol. 2017;55(9):2599-2608. doi:10.1128/jcm.00635-17

2. Dumler JS, Carroll KC, Patel R: Bartonella. In: Carroll KC, Pfaller M, Landry ML, eds. Manual of Clinical Microbiology. 12th ed. ASM Press; 2019:chap 50

Performance

Method Description

Bacterial nucleic acid is extracted from the specimen using the automated MagNA Pure instrument. The purified DNA is placed on the LightCycler instrument, which amplifies and monitors by fluorescence the development of target nucleic sequences after each polymerase chain reaction (PCR) cycle. A specific target sequence from *Bartonella* species is amplified and the resulting segment is detected using specific hybridization probes. Detection of the bartonella target is performed through melting curve analysis using the LightCycler software.(Cockerill FR, Uhl JR: Applications and challenges of real-time PCR for the clinical microbiology laboratory. In: Reischl U, Wittwer C, Cockerill F, eds. Rapid Cycle Real-Time PCR Methods and Applications. Springer-Verlag; 2002:3-27; Dumler JS, Carroll KC, Patel R: Bartonella. In: Carroll K, Pfaller M, Landry ML, et al, eds. Manual of Clinical Microbiology. 12th ed. ASM Press; 2019:893-904)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

2 to 7 days

Specimen Retention Time

1 week

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

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

87801

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
BARTB	Bartonella PCR, B	16275-0

Result ID	Test Result Name	Result LOINC® Value
SRC98	Specimen Source	31208-2
56056	Bartonella PCR	16275-0