MAYO CLINIC LABORATORIES

Test Definition: BABG

Babesia microti IgG Antibodies, Serum

Overview

Useful For

An adjunct in the diagnosis of babesiosis

Follow-up of documented babesiosis

Testing Algorithm

For information see Acute Tick-borne Disease Testing Algorithm.

Special Instructions

- Acute Tick-borne Disease Testing Algorithm

Method Name

Immunofluorescence Assay (IFA)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Supplies: Sarstedt Aliquot Tube 5 mL (T914)
Collection Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Forms

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

Specimen Minimum Volume

0.4 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Heat-inactivated specimen	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	14 days	
	Frozen	14 days	

Clinical & Interpretive

Clinical Information

Babesiosis is a zoonotic infection caused by the protozoan parasite *Babesia microti*. The infection is acquired by contact with *Ixodes* ticks carrying the parasite. The deer mouse is the animal reservoir, and overall, the epidemiology of this infection is much like that of Lyme disease. Babesiosis is most prevalent in the Northeast, upper Midwest, and Pacific Coast of the United States.

Infectious forms (sporozoites) are injected during tick bites, and the organism enters the vascular system where it infects red blood cells (RBC). During this intraerythrocytic stage, it becomes disseminated throughout the reticuloendothelial system. Asexual reproduction occurs in RBC, and daughter cells (merozoites) are formed that are liberated on rupture (hemolysis) of the RBC.

Most cases of babesiosis are subclinical or mild, but the infection can be severe and life-threatening, especially in older or asplenic patients. Fever, fatigue, malaise, headache, and other flu-like symptoms occur most commonly. In the most severe cases, hemolysis, acute respiratory distress syndrome, and shock may develop. Patients may have hepatomegaly and splenomegaly.

A serologic test can be used as an adjunct in the diagnosis and follow-up of babesiosis, when infection is chronic or persistent, or in seroepidemiologic surveys of the prevalence of the infection in certain populations. Babesiosis is usually diagnosed by observing the organisms in infected RBC on Giemsa-stained thin blood films of smeared peripheral blood. Serology may also be useful if the parasitemia is too low to detect or if the infection has cleared naturally or following treatment.

Reference Values

<1:64

Reference values apply to all ages.

Interpretation

A positive result of an indirect fluorescent antibody test (titer > or =1:64) suggests current or previous infection with *Babesia microti*. In general, the higher the titer, the more likely it is that the patient has an active infection. Patients with documented infections have usually had titers ranging from 1:320 to 1:2560.

Cautions

Previous episodes of babesiosis may produce a positive serologic result.

In selected cases, documentation of infection may be attempted by animal inoculation or polymerase chain reaction (PCR) methods (LBAB / *Babesia* species, Molecular Detection, PCR, Blood).

Performance characteristics have not been established for the following specimen characteristics:
-Lipemic
-Hemolyzed

Clinical Reference

1. Spach DH, Liles WC, Campbell GL, Quick RE, Anderson Jr DE, Fritsche TR. Tick-borne diseases in the United States. N Engl J Med. 1993;329(13):936-947
2. Vannier E, Gelfand JA. *Babesia* species. In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:3400-3409

Performance

Method Description

The patient's serum is diluted and is placed in microscopic slide wells, which have been coated with *Babesia microti*-infected red blood cells from Syrian hamsters. After incubation, the slides are washed and a fluorescein-isothiocyanate conjugate is added to each well. The slides are then read using a fluorescence microscope and significant fluorescent staining of intraerythrocytic organisms constitutes a positive reaction.(Krause PJ, Telford III SR, Ryan R, et al. Diagnosis of babesiosis: Evaluation of a serologic test for the detection of *Babesia microti* antibody. J Infect Dis. 1994;169[4]:923-926; package insert: Babesia IFA IgG. DiaSorin Molecular; 8/12/2016)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

Same day/1 to 3 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 using an analyte specific reagent. 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 US Food and Drug Administration.

CPT Code Information

86753

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
BABG	Babesia microti IgG Ab, S	16117-4

Result ID	Test Result Name	Result LOINC® Value
81128	Babesia microti IgG Ab, S	16117-4