Quest Diagnostics®

Make timely, differential tick-borne disease diagnoses **with comprehensive testing solutions**

Timing is **critical**

CDC guidelines recommend lab testing to confirm diagnosis of tick-borne diseases.[1] When a patient is exposed, when their symptoms began, and other factors can affect the timing and type of diagnostic testing.

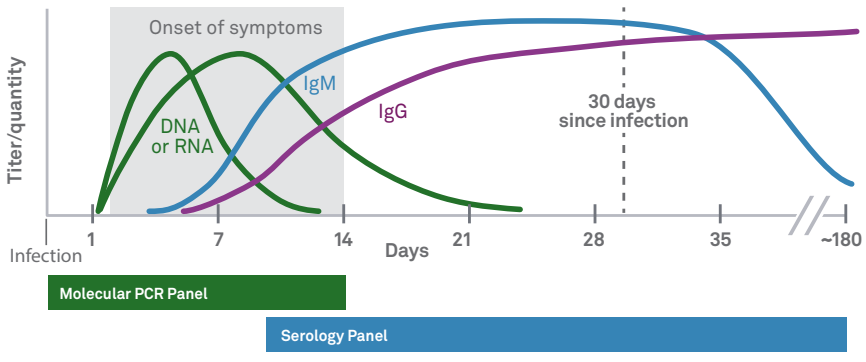
Molecular vs serologic testing: making the right choice for your patients

CDC-recommended and FDA-approved laboratory tests for confirmation of tick-borne diseases include serology and molecular testing, such as PCR.[1]

In general, **molecular testing** is indicated during the **acute phase of infection prior to antibody development,** and this window of time may differ among various tick-borne pathogens. For example, the DNA of *Borrelia burgdorferi* (Lyme) may only be present in the blood for up to 48 hours.[2]

Antibodies may begin to develop 4-7 days or later after disease onset and can take up to several weeks to become well established.[3]

7 days after the initial infection/exposure, serology testing may be helpful in evaluating the patient.



Note: This curve is a generalization and can vary for different organisms.

Quest Diagnostics offers a comprehensive menu of individual tests and panels for tick-borne disease testing that aligns with CDC recommendations

The CDC recommends 2-step serologic testing for Lyme disease, using a validated standard two-tier test (STTT) or modified two-tier test (MTTT) algorithm.[4] Quest offers both. During early-stage Lyme disease (first 30 days of infection), the MTTT has been shown to have improved sensitivity and detect more cases of Lyme compared to STTT.

Test code	Test name	Description
6646	Lyme Disease Ab with Reflex to Blot (IgG, IgM)	Immunoblot testing qualitatively examines antibodies in a patient's specimen with high specificity and is appropriate for confirming a detected screening result. STTT is the immunoblot method used for this confirmation.
39733	Lyme Disease Antibody with Reflex to Immunoassay (IgG, IgM)	Serum is first tested in an immunoassay measuring combined IgG and IgM antibodies to specific *Borrelia* proteins. If reactive, the sample is then tested in separate *Borrelia burgdorferi* IgG and IgM immunoassays, following the MTTT algorithm.

MTTT does not include the Western blot, which can be time consuming, and interpretation of results can be subjective

MTTT has a higher sensitivity than the STTT in the early stages of infection and maintains similar specificity as the STTT

MTTT algorithm has a higher positive predictive value than the STTT

Know which test to choose and when

A Quest serology panel is the ideal choice when symptoms are unclear, and it is uncertain if or when a tick bite may have occurred.

Tick-Borne Disease Antibodies Panel with Reflexes[a] Detection of IgM and IgG antibodies **>4-7 days or later after disease onset**	
Test code:	16220
Preferred specimen:	2 mL serum collected in a serum separator tube (SST) and transferred to a plastic transport tube
Panel components:	Lyme Disease Antibody with Reflex to Immunoassay (IgG, IgM) (39733), *Anaplasma phagocytophilum* Antibodies (IgG, IgM) with Reflex to Titers[b] (16189), *Babesia microti* Antibodies (IgG, IgM) with Reflex to Titers[b] (16194), *Ehrlichia chaffeensis* (IgG, IgM) with Reflex to Titers[b] (16197)

For more information on the Tick-borne Disease Antibodies Panel with Reflexes, please visit the Test Directory ›

A Quest molecular panel is the ideal choice when exposure is certain and occurred within days.

Tick-borne Disease, Acute Molecular Panels[a,b] Detection of different pathogens that may be in the blood for shorter periods of time, **some only 24-48 hours**	
Test codes:	Tick-borne Disease, Acute Molecular Panel: 94322 Tick-borne Disease, Acute Molecular Panel, Non-Lyme: 32338
Preferred specimen:	3 mL whole blood collected in an EDTA (lavender-top) tube
Panel components:	Individual tests/panel components for Tick-borne Diseases, Acute Molecular Panel and Tick-borne Diseases, and Acute Molecular Panel, Non-Lyme include Borrelia Species DNA, Qualitative Real-Time PCR, Miscellaneous[b,c] (15777); *Anaplasma phagocytophilum* DNA, Qualitative Real-Time PCR[b] (17320); *Babesia microti* DNA, Real-Time PCR[b] (37314); *Borrelia miyamotoi* DNA, Real-Time PCR, Miscellaneous[b] (93795); *Ehrlichia chaffeensis* DNA, Real-Time PCR[b] (11353)

For more information on the Tick-borne Disease, Acute Molecular Panel or the Tick-borne Disease, Acute Molecular Panel, Non-Lyme, please visit the test directory ›

Learn more at **QuestDiagnostics.com/Tick**

[a] Components of panels can be ordered separately.
[b] This test was developed, and its analytical performance characteristics have been determined by Quest Diagnostics. It has not been cleared or approved by the FDA. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.
[c] Not included in Tick-borne Disease, Acute Molecular Panel, Non-Lyme.

References
1. CDC. Testing and diagnosis for Lyme disease. May 15, 2024. Accessed February 14, 2025. https://www.cdc.gov/lyme/diagnosis-testing/index.html 2. Branda JA, Steere AC. Laboratory diagnosis of Lyme borreliosis. *Clin Microbiol Rev*. 2021;34(2):e00018-19. doi:10.1128/CMR.00018-e00019. 3. Madison-Antenucci S, Kramer LD, Gebhardt LL, Kauffman E. Emerging tick-borne diseases. *Clin Microbiol Rev*. 2020;33(2):e00083-18. doi: 10.1128/CMR.00083-18 4. CDC. Tickborne diseases of the United States: a reference manual for healthcare providers. 6th edition, 2022. Accessed April 10, 2023. https://www.cdc.gov/ticks/hcp/data-research/tickborne-disease-reference-guide/index.html

Test codes may vary by location. Please contact your local laboratory for more information.

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