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**Lab Dept:** Microbiology/Virology

**Test Name:** LYME DISEASE PCR, SPINAL/SYNOVIAL FLUID  
OR FRESH TISSUE

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***General Information***

**Lab Order Codes:** LYPCR

**Synonyms:** Borrelia burgdorferi PCR; Lyme Disease PCR; Lyme Disease by Polymerase Chain Reaction

**CPT Codes:** 87476 – Borrelia burgdorferi, amplified probe technique  
87798 x2 – Infectious agent, amp probe technique, ea organism

**Test Includes:** A positive or negative result indicating the presence or absence of *Borrelia burgdorferi* DNA, *Borrelia mayonii* DNA and *Borrelia afzelii/garinii* DNA in the specimen submitted.

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***Logistics***

**Test Indications:** Confirmation of active Lyme Disease. Monitoring Lyme Disease treatment. Diagnosing and monitoring Lyme arthritis.

**Lab Testing Sections:** Microbiology/Virology – Sendouts

**Referred to:** Mayo Medical Laboratories (MML Test: PBORR)

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 1 – 4 days; Performed Monday-Saturday (June through November) and Monday-Friday (December through May)

**Special Instructions:** Testing of CSF by PCR in patients with suspected Lyme neuroborreliosis should be requested only on patients with positive *Borrelia burgdorferi* antibody in serum confirmed by Western blot assay and with abnormal CSF findings (elevated protein and WBC >10 cells/high power field).

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***Specimen***

**Specimen Type:** Spinal (CSF) fluid or Synovial fluid  
Note: Fresh Tissue will be accepted

<b>Container:</b>	Screw-capped sterile vial
<b>Draw Volume:</b>	1 mL (Minimum: 0.3 mL) CSF or Synovial Fluid Fresh Tissue
<b>Processed Volume:</b>	Same as Draw Volume
<b>Collection:</b>	CSF/Synovial fluid collection  Tissue: 4 mm (Minimum: 3 mm) Skin or Synovial Biopsy in Sterile container with normal saline. 1. Submit only fresh tissue 2. Skin biopsies: a. Wash biopsy site with antiseptic soap. Thoroughly rinse area with sterile water. Do not use alcohol or iodine preparations. A local anesthetic may be used. b. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. 3. Label specimen with source tissue
<b>Special Processing:</b>	Lab Staff: Fluid specimen should be in a sterile, screw-capped plastic vial. Maintain sterility. Store at ship at refrigerated temperatures.
<b>Patient Preparation:</b>	None
<b>Sample Rejection:</b>	Mislabeled or unlabeled specimens

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### ***Interpretive***

<b>Reference Range:</b>	Negative (reported as positive or negative)  A positive result indicates the presence of DNA from <i>Borrelia burgdorferi</i> , <i>Borrelia mayonii</i> , <i>Borrelia afzelii</i> or <i>Borrelia garinii</i> , the agents of Lyme disease.  A negative result indicates the absence of detectable target DNA in the specimen. Due to the clinical sensitivity limitations of the PCR assay, a negative result does not preclude the presence of the organism or active Lyme disease.
<b>Critical Values:</b>	N/A

**Limitations:**

Serologic tests are recommended for diagnosis of Lyme disease. PCR may play an adjunctive role, but may not detect *Borrelia burgdorferi* DNA from CSF in cases of active or chronic disease. The presence of inhibitory substances, may also cause a false-negative result. If clinical features of illness are highly indicative of Lyme neuroborreliosis, serologic testing on CSF is warranted. PCR test results should be used as an aid in diagnosis and not considered diagnostic by themselves. These results should be correlated with serologic and epidemiologic data and clinical presentation of the patient.

Concurrent infections with multiple tick-borne pathogens, including *Ehrlichia chaffeensis*/*Anaplasma phagocytophilum* and/or *Babesia microti*, and *Borrelia miyamotoi* (a relapsing fever of *Borrelia*) have been reported in the United States, and consideration should be given to testing for other pathogens if clinically indicated.

This assay detects some members of the *Borrelia burgdorferi* sensu lato (Bbsl) complex that are not considered to be human pathogens, but may be found in ticks and other animals. Therefore, this assay should not be used to test nonhuman specimens.

**Methodology:**

Polymerase Chain Reaction (PCR)/DNA Probe Hybridization  
(PCR is utilized pursuant to a license agreement with Roche Molecular Systems, Inc.)

**References:**

[Mayo Medical Laboratories Web Page](#) November 2016