UPTOSPEED Express Updates
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Application Note | Jan 2025 | Vol. 1



Diagnosis of Lyme Disease in Veterinary Medicine.

Lyme disease is a bacterial infection caused by the bacteria *Borrelia burgdorferi* and *Borrelia mayonii,* which is most commonly transmitted through the bite of infected ticks. It is generally considered rare in India, with only 3,000 to 5,000 cases diagnosed each year.

However, the actual extent of the disease is not known, and there are several factors that contribute to the underreporting of cases:

- **Lack of awareness**
  Clinicians may not consider Lyme disease as a potential diagnosis due to its varied symptoms.
- **Ecological changes**
  Global travel and ecological changes could increase the risk of Lyme disease in India by altering the presence of tick populations.
- **No identified vector species**
  While Ixodes ticks, which can transmit Lyme disease, are found in India, no specific tick species has been identified as a carrier. This zoonotic infection can affect both humans and animals. Dogs are the most affected, with typical symptoms including joint swelling, fatigue, fever, and loss of appetite.

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Detection and Analysis Process

The body's immune system produces antibodies in response to exposure to the bacteria. Lyme disease tests measure antibodies against *Borrelia* in the blood.

The Centres for Disease Control and Prevention (CDC) recommend two types of tests for the detection and diagnostic confirmation of Lyme disease: an immunoassay followed by a confirmatory Western Blot in case of a positive result.

Lyme disease: an immunoassay followed by a confirmatory Western Blot in case of a positive result.



Collection and Isolation of Antibodies in Serum for Diagnosis

The antibodies used for these tests are obtained from serum, which requires collecting a blood sample from the infected animal. This sample is taken in a tube without anticoagulant and left to stand for about 30 minutes at room temperature to allow clot formation.

Subsequently, the sample is centrifuged at 1,500xG for 15 minutes at 4°C, causing the clot to precipitate due to its weight, leaving the serum, which contains the antibodies of interest, in the supernatant.

Finally, to isolate the antibodies from the serum, sonication is first used to break the cells, releasing both the antibodies inside and those attached to the cell membrane. The sample is then centrifuged at 1,500xG for 15 minutes at 4°C to separate the cellular debris (heavier and sedimented) from the proteins of interest (lighter and remain in the supernatant). Among these proteins are the antibodies, which will be analyzed in the corresponding test.

The ROTA 6R V/FM centrifuge is ideal for these centrifugation steps, offering the capacity and optimal conditions for precise separations, as well as efficient temperature control that maintains the sample at 4°C, preserving the integrity of the antibodies and the quality of the serum.

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Recommended Centrifuge: Rota 6R V/FM



Product – Rota 6R V/FM

ROTA 6R V/FM (Refrigerated Centrifuge)

PART NO : 100122

ROTOR : 4X500mL
(Swing-Out Rotor) including adapters
PART NO : 200384

ROTOR : 14x50mL
(Fixed-Angle Rotor) including adapters
PART NO : 200600

About Scientiquipp. Pvt.Ltd.

Since the 1980's Scientiquipp (formerly known as Plasto Crafts) has been synonymous with customer-oriented processes and innovative products, such as laboratory devices. Today, we serve as experts and advisors, using our unique knowledge and experience to support laboratories and research institutions around India. The foundation of the company's expertise is its focus on its customers. Scientiquipp's exchange of ideas with its customers results in comprehensive solutions that in turn become industry standards. Scientiquipp will continue this path in the future, to the standard set by the company's founders: that of *enabling the future of medicine.*

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