

Anti-Borrelia

**Sensitive and specific IgG
and IgM antibody detection**



sebia 

The new language of life

Borrelia burgdorferi *and Lyme-Borreliosis*



Pathogen

Lyme borreliosis is the most common tick-borne disease in Europe. The disease is caused by bacteria of the genus group *Borrelia burgdorferi sensu lato*.

Epidemiology

Borrelia is widespread in the northern hemisphere. The infestation of ticks and the distribution of species vary greatly from region to region. *B. afzelii* and *B. garinii* are very common in Europe. *B. burgdorferi sensu stricto* dominates in the USA.

Transmission

Small rodents such as rats and mice as well as red deer are considered to be pathogen reservoirs. In the USA, the spirochetes are primarily transmitted by shield ticks (*Ixodes scapularis*, *Ixodes dammini* and *Ixodes pacificus*). In Europe, people become infected primarily through bites from the common woodbuck (*Ixodus ricinus*). In Asia, the bacteria are transmitted by the taiga tick (*Ixodes persulcatus*).

Clinical Symptoms

Around 30 – 60 % of the infected persons develop the characteristic *erythema migrans* locally around the tick bite. After some weeks, the bacteria may spread throughout the body and affect organs, joints, muscles and the nervous system. The main symptoms in this stage are Bannwarth syndrome with facial paralysis, arthritis and myalgia. Incipient neuroborreliosis may also manifests at this stage. After months, severe chronic symptoms such as *acrodermatitis chronica atrophicans*, chronic recurrent lyme arthritis and chronic neuroborreliosis can occur.

Diagnosis

The diagnosis of infections with *Borrelia burgdorferi sensu lato* is based on the clinical symptoms and confirmed by the demonstration of specific antibodies. Typically, a sensitive screening test and a specific confirmatory test are performed. IgM and IgG antibodies are produced during primary infections. IgM antibodies are usually no longer detectable a few weeks after infection. IgG antibodies remain much longer and confirm contact with the pathogen.

Anti-Borrelia IgG / IgM Abs. *Reliable antibody determination*

Antigen

The Alegria Anti-Borrelia IgG Monotest is based on recombinant VlsE, DbpA, OspC, and p83/p100 antigens of *B. burgdorferi sensu stricto*, *B. afzelii* or *B. garinii*. The Alegria Anti-Borrelia IgM Abs. Monotest is based on recombinant VlsE, OspC, and p41i antigens of *B. burgdorferi sensu stricto*, *B. afzelii* or *B. garinii*.

Calibration

The Alegria Anti-Borrelia IgG and IgM Abs. Monotests are calibrated using internal reference samples. Results are expressed in U/mL.



Sensitivity and Specificity

	Sensitivity	Specificity	Diagnostic Efficiency
Anti-Borrelia IgG	91.1 %	96.4 %	94.8 %
Anti-Borrelia IgM Abs.	80.0 %	98.4 %	95.1 %

Precision Anti-Borrelia IgG

	Intraassay Repeatability		Interassay Reproducibility	
	Antibody Activity (U/mL)	Coefficient of Variation (CV)	Antibody Activity (U/mL)	Coefficient of Variation (CV)
Sample 1	6.1 U/mL	5.4 %	8.8 U/mL	5.7 %
Sample 2	24.2 U/mL	6.3 %	25.8 U/mL	6.4 %
Sample 3	155.0 U/mL	5.4 %	150.7 U/mL	5.4 %

Precision Anti-Borrelia IgM Abs.

	Intraassay Repeatability		Interassay Reproducibility	
	Antibody Activity (U/mL)	Coefficient of Variation (CV)	Antibody Activity (U/mL)	Coefficient of Variation (CV)
Sample 1	7.7 U/mL	4.1 %	8.1 U/mL	4.0 %
Sample 2	23.6 U/mL	2.3 %	23.3 U/mL	4.0 %
Sample 3	103.3 U/mL	3.8 %	105.7 U/mL	4.9 %





Product Highlights

- ELISA-based random access determination of IgG and IgM antibodies against *Borrelia*
- Full automation and complete traceability with Alegria 2
- Lab-on-a-Strip: ready-to-use test-specific reagents in individually sealed and barcoded Alegria Monotest strips
- Sensitive and specific detection of antibodies against immunogenic recombinant antigens from the most important *Borrelia* species
- Excellent diagnostic efficiency
- High reproducibility for reliable test results
- Economical all-in-one Alegria Monotests, particularly suited for small series
- Flexible combination of Alegria Monotests for optimal workflow efficiency

Ordering *information*

- Anti-Borrelia IgG **ORG 911G**
- Anti-Borrelia IgM Abs. **ORG 911MX**



Scan here **for more information** about Alegria Anti-Borrelia Monotests

Literature

Branda, J.A. *et al.* (2021) Laboratory Diagnosis of Lyme Borreliosis. *Clin. Microbiol. Rev.* 34, e00018 – 19.

Kurokawa, C. *et al.* (2020) Interactions between *Borrelia burgdorferi* and ticks. *Nat. Rev. Microbiol.* 18, 587 – 600.

Talagrand-Reboul, E. *et al.* (2020) Immunoserological Diagnosis of Human Borreliosis: Current Knowledge and Perspectives. *Front. Cell. Infect. Microbiol.* 10, 241.




ORGENTEC Diagnostika GmbH |

Carl-Zeiss-Straße 49-51 | 55129 Mainz | Deutschland |

Tel. : +49 6131 / 9258-0 | Fax : +49 6131 / 9258-58 | E-mail:

orgentec@orgentec.com | **www.orgentec.com**

©Sebia2026  **ORGENTEC Diagnostika GmbH** - Carl-Zeiss-Straße 49-51 | 55129 Mainz | Deutschland - Ref.: QM211344 - ABLIEN - 02/2025 - 02 - Non-contractual illustration - ORGENTEC reserves the right to modify at any time and without notice the information contained in this document intended for healthcare professionals. This document contains information intended for wide distribution and may therefore contain product details or information that is not available or valid in your country. Carefully read the instructions in the reagent package inserts and instrument manuals.