

Borrelia burgdorferi (Liquor)



We have adapted our Borrelia test kit also to be able to also work with Human Cerebrospinal Fluid (CSF), besides the standard samples of Plasma and Serum. This adaptation was done in order to expand the usability of our test kits so we can continue to meet the needs and demands of our customers.

Borrelia burgdorferi is responsible for the Lyme disease (Borreliose). These are thin, flexible, helically wound, highly motile spirochetes.

The pathogens are transmitted by the bite of various tick species, in Europe mostly by *Ixodes ricinus* (sheep tick). The incubation period varies from three to 30 days. Left untreated, the disease goes through three stages (see tab.), though individual courses often deviate from the classic pattern. The presenting symptom in stage I is the erythema chronicum migrans (ECM).

Lyme disease occurs throughout the northern hemisphere. There are some endemic foci where the infection is more frequent. In endemic areas of Germany, approximately 3-7% of the larvae and 10-34% of nymphs and adult ticks are infected by *Borrelia burgdorferi sensu lato*. Wild animals from rodents on up to deer are the natural reservoir of the Lyme disease *Borrelia*, although these species seldom come down with the disease. The ticks obtain their blood meals from these animals.

Species	Disease	Symptoms	Mechanism of infection
<i>Borrelia burgdorferi</i>	Lyme disease (Borreliose)	The disease goes through 3 stages: Stage I: After 4-8 weeks an erythema chronicum migrans (ECM) develops on the skin (sting). Stage II: After 3 more weeks the generalisation of the pathogens starts. Influenzalike symptoms appear. With 80 % of the patients a lymphocytic meningoradiculitis Bannwarth with facialis paresis and aseptic meningitis as well as brief attacks of arthritis and carditis develop. Stage III: Neurological diseases (Chronic encephalomyelitis), Acrodermatitis chronica atrophicans, Lyme-Arthritis	Transmission by the bite of various tick species. In Europe by <i>Ixodes ricinus</i> In USA by <i>Ixodes damini</i>

Infections may be diagnosed by:

Microscopy: direct detection and identification of the pathogen is possible but uncertain
Serology: determination of specific antibodies based on the ELISA-technique

! Because of the numbers of uncharacteristic symptoms (neurological, dermatological, cardial and rheumatic manifestations may occur) the diagnosis of Lyme disease is mostly difficult and happens pretty late. But only the earliest diagnosis leads to an efficient therapy with antibiotics. In the chronic stage the pathogens are almost untouchable.

NovaLisa™ *Borrelia burgdorferi* IgG/IgM recombinant ELISA:

The NovaLisa™ *Borrelia burgdorferi* IgG/IgM recombinant ELISA is intended for the qualitative determination of IgG-/IgM-specific antibodies against *Borrelia burgdorferi* in human Liquor (CSF), serum or plasma (citrate).

Recombinant antigens:

IgG **OspC** (*B. sensu stricto*, *B. garinii*), **p100** (*B. afzelii*), **p18** (*B. afzelii*), **p41i** (*B. garinii*)
IgM **OspC** (*B. afzelii*, *B. garinii*), **p41i** (*B. garinii*)

The Lipoprotein **OspC** (22 kDa, **p22**) induces the early development of antibodies in the ECM-stage (see tab.). The marker **p100** and **p18** are specific for the determination of IgG-antibodies and lead to a high sensitivity. **P41i** is included as an antigen to avoid cross-reactivity with sera of Syphilis.

Specific performance characteristics:

	Intraassay			Interassay			Sensitivity %	Specificity %
	n	Mw	Vk %	n	Mw	Vk %		
IgG	7	1.84	4.6	3	1.61	4.0	98.6	100
Liquor - IgG							>90	>90
IgM	8	1.06	8.6	14	0.76	4.1	93.0	98.8
Liquor - IgM							>90	>90

Order information:

ELISA	Number of determinations	Product number
<i>Borrelia burgdorferi</i> IgG	96	BORG0040
<i>Borrelia burgdorferi</i> IgM	96	BORM0040