REAGENA
Visible Difference

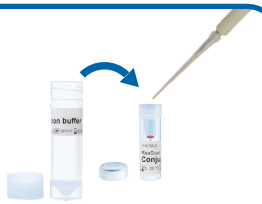
DIAGNOSTICS FOR TICK-BORNE INFECTIONS




Reagena is a pioneer in rapid diagnostics for zoonotic diseases. Reagena offers rapid tests for reliable detection of tick-borne encephalitis (TBE) virus specific antibodies in human serum and cerebrospinal fluid (CSF). Reagena also provides a diagnostic tool for the rapid determination of CXCL13 in human CSF, which helps clinicians in the treatment decision for suspected Lyme neuroborreliosis (LNB) patients.

ReaScan® rapid tests

Rapid tests based on the ReaScan technology enable very high levels of sensitivity and specificity. The test line intensity is read by the ReaScan reader, which reports the result as a numerical value. Total analysis time is only 20 minutes. Test result is read in seconds with ReaScan reader.



Transfer the (diluted) sample into the conjugate vial and mix carefully.

Transfer the conjugate sample mixture into the test cassette's sample well.

Start the timer, wait for 20 minutes, and read the results with the ReaScan reader.

ReaScan CXCL13
Lot specific cut-off values

Lot: SF01/1

Value	Concentration
< 40	< 250 pg/ml
40 – 90	250 – 500 pg/ml
> 90	> 500 pg/ml

Interpret the result according to the lot specific cut-off values.

ReaScan® CXCL13

ReaScan CXCL13 is a lateral flow rapid test for detection of chemokine CXCL13 in human cerebrospinal fluid (CSF).

Product	Test performance	Packaging	Ref. number
ReaScan CXCL13	Specificity 96% Sensitivity 100% with cut-off 250 pg/mL	10 tests	114253

Performance was obtained by comparing ReaScan CXCL13 with a widely used CXCL13 ELISA (Human CXCL13/BLC/BCA-1 Quantikine, R&D Systems, Minneapolis, USA) with 225 patient samples with a suspected diagnosis of LNB. Ref.: Pietikäinen A, et al, Point-of-care testing for CXCL13 in Lyme neuroborreliosis, Diagn Microbiol Infect Dis (2018), https://doi.org/10.1016/j.diagmicrobio.2018.02.013.

ReaScan® TBE IgM

ReaScan TBE IgM is a lateral flow rapid test for detection of tick-borne encephalitis (TBE) virus specific IgM antibodies in human serum and cerebrospinal fluid (CSF).

Product	Test performance	Packaging	Ref. number
ReaScan TBE IgM	Specificity 99% Sensitivity 98%	10 tests	114106

Performance was obtained when ReaScan TBE IgM was tested with 83 confirmed TBE IgM positive and 74 TBE IgM negative patient serum samples

Tick-borne Encephalitis virus

Tick-borne encephalitis (TBE) virus belongs to Flaviviruses and it may cause an infection of the central nervous system (CNS). TBE virus, which is found in most European countries, Russia and Northern Asia, can be transmitted to humans by the bite of infected ticks (e.g. Ixodes ricinus, Ixodes persulcatus).

Symptoms of TBE virus infection usually appear in a two-phase course. After an incubation period of 1-2 weeks, flu-like symptoms are developed in the viremic phase of the illness and then a brief symptom-free period occurs.

The second phase of the disease may involve the CNS with symptoms of e.g. meningitis, meningoencephalitis, and meningoencephalomyelitis.

On average, the severity of the disease increases with patients' age, and the case-fatality is 0.5 - 2% in Europe. Considerably higher mortality has been reported for Siberian and Far Eastern TBE virus subtype.

Ref.: Bogovic P and Strle F. 2015. Tick-borne encephalitis: A review of epidemiology, clinical characteristics, and management. World J Clin Cases. May 16;3(5):430-441

Lyme neuroborreliosis and CXCL13

Lyme borreliosis is an infectious disease caused by the spirochete Borrelia burgdorferi sensu lato. It is transmitted to humans by the bite of an infected tick. Lyme neuroborreliosis (LNB) occurs when the disease affects the nervous system.

The diagnosis of LNB relies on a combination of clinical and laboratory findings.The chemokine CXCL13 has been shown to be elevated in the CSF of patients with early Lyme neuroborreliosis, even before the development of intrathecal antibodies against borrelia.

The increase of CXCL13 concentration in CSF during early LNB is significant; the CSF chemokine level in healthy individuals is very low, while in LNB patients CXCL13 concentration is usually more than 100 - 1000 times higher.

Further, CXCL13 level falls rapidly within a few weeks after the initiation of successful antibiotic therapy. Similar levels of CXCL13 as seen in LNB have been observed e.g. in patients with CNS lymphoma, tuberculous meningitis and neurosyphilis.

Ref.: Koedel et al. 2015, Nat. Rev. Neurol. 11, 446–456. Lyme neuroborreliosis – epidemiology, diagnosis and management.

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