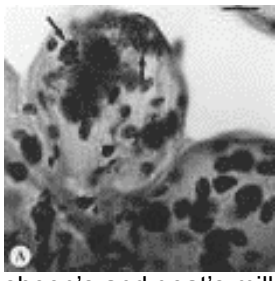
TBE Virus



The tickborne encephalitis virus is the causative agent of „early summer meningoencephalitis (ESME), a tick-borne viral infection of the central nervous system. The European ESME occurs in western and central Europe (Germany, Austria, Swiss, Hungary, Czech Republic, Slovak Republic, former Yugoslavia, Poland, Baltic States, Russia and Scandinavia.
The viruses are mainly transmitted by the bite of infected sheep tick (Ixodes ricinus), the most frequent hard tick species in central Europe. They use small mammals like hedgehogs, mice, moles etc. as host. A high number of infections are registered in the periods May-June and August-October. Transmission by non-pasteurized milk (cow's, sheep's and goat's milk) is possible but very rare.

While sucking blood, ticks secrete large amounts of saliva, containing pathogens like the TBE virus. After inoculation to the skin and local replication, the virus reaches the regional lymph nodes, wherefrom it is spread in several extralymphatic organs (like connective, muscular and glandular tissue). After another replication phase the virus infects the brain (encephalitis), the membrane that surrounds the brain and spinal cord (meningitis) or both (meningoencephalitis).
The most infections run subclinical. Clinical infections show a typical two-phase course of disease: After an incubation period of 1 week unspecific influenza-like symptoms develop (mild fever, headache, muscle and limb pain, gastrointestinal discomfort), that generally last less than 1 week. After an interval of 1 week without any symptoms high fever appears (up to 40°C) and it leads to encephalitis resp. meningitis.

Acute meningitis mainly occurs in children, lasts approx. 1 week and disappears with no symptoms. In the over-40-years-old a meningoencephalitis may develops accompanied by somnolence, acute psychosis and coma. The lethality rate is approx. 1%. In adults paralytic late sequelae may occur. 5-10 days after the fever decreased a paresis (mainly of the upper extremities) develops.

Species	Mechanism of infection	Symptoms	Complications	Diagnostic
Tickborne encephalitis virus	Tick bite (Western and central Europe: Ixodes ricinus; East Europe: Ixodes persulcatus) Rarely by infected milk	Two-phase disease: Phase I: After an incubation period of 7-14 days, mild influenzalike symptoms, asymptomatic interval Phase II: high fever, meningitis and/or encephalitis develop.	Paresis, ataxy, nystagmus, intention tremor, respiratory failure, meningoradiculitis, gastroenteritic discomfort	Neutralisation test Haemaglutination-stop-test KBR ELISA

Infections may be diagnosed by:

Microscopy:	Isolation of the pathogen in cell cultures or baby mice
Serology:	Determination of specific antibodies based on the ELISA-technique

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NovaLisa™ TBE/ FSME IgG/IgM ELISA:

The NovaLisa™ TBE/ FSME IgG/IgM ELISA is intended for the quantitative (IgG) resp. qualitative (IgM) determination of IgG-/IgM- class antibodies against TBE-Viruses in human serum or plasma (citrate).

NovaLisa™ TBE/ FSME IgG plus ELISA:

The NovaLisa™ TBE/ FSME IgG plus ELISA contains an additional control for quality control in the lab.

Antigens:

Purified TBE (Tick Borne Encephalitis) antigens

Specific performance characteristics:

	Intraassay			Interassay			Sensitivity %	Specificity %
	n	Mean	CV %	n	Mean	CV %		
IgG	7 8 8 8	0,32 0,98 1,3 2,15	6,8 5,7 4,7 4,2	14 16 15 16	0,31 0,92 1,37 2,28	7,35 8,3 7,8 6,7	> 98	> 98
IgM	12	0,72	7,5	24	0,73	8,9	80	95

Order information:

ELISA	Number of determinations	Product number
TBE/ FSME IgG	96	TICG0440
TBE/ FSME IgM	96	TICM0440
TBE/ FSME IgG plus	96	PTICG044

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