



V 21 Genetic studies of tick-borne encephalitis virus strains from Western and Eastern Siberia

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At present, tick-borne encephalitis virus (TBEV) is divided into 3 genotypes: Far-Eastern (prototype strain Sofjin), Siberian (2 prototype strains – Vasilchenko and Zausaev), and Western (prototype strain Neudoerfl).

The aim of this study was the molecular-genetic investigations of TBEV strain samples collected in different regions of Western and Eastern Siberia.

It was shown that strains of 3 TBEV genotypes were found in the territories of both Western and Eastern Siberia also confirmed earlier by molecular hybridization of nucleic acids test.

Based on phylogenetic analysis, all strains from Western Siberia corresponding to the Siberian genotype were divided into 3 subgenotypes – Zausaev, Vasilchenko, and a still undescribed subgenotype. The strains from Eastern Siberia were divided only in Zausaev and Vasilchenko subgenotypes. Moreover, the Zausaev subgenotype was shown to be found more frequently in Western Siberia, although the Vasilchenko subgenotype was present more often in Eastern Siberia.

Also 2 groups of strains were detected that could possibly be new TBEV genotypes meeting the requirements of differences in genome sequences homology level with other genotypes.

The fourth possible genotype was presented by only one isolate, 178-79, and originated from Irkutsk region, Russia. The fifth possible genotype included 10 isolates, one of them, 886-84, was already described earlier. So, the existence of this so-called 'group 886' showed that such TBEV variants have existed in nature and occupy a certain niche, since they were isolated from different species (rodents and ticks), within different regions in Eastern Siberia and in several years (1983–1990). These findings raise the question whether 'group 886' variants are health threatening because recently the comparison of genome fragment sequence of TBEV from clinical samples of a fatal case in Mongolia revealed a high level of homology (98.5%) with the strain 886-84.

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