



V 22 Phylogeny of tick-borne encephalitis viruses in central Europe

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Tick-borne encephalitis virus (TBEV) is a member of the genus *Flavivirus* in the family *Flaviviridae*. It is transmitted in nature by ticks. So far, 3 subtypes in Europe and Asia are characterized. In Central Europe so far, only TBEVs of the Western subtype have been detected.

In the current study, the E proteins of a total of 60 TBEV strains were sequenced and analysed. The TBE strains came from southern Germany, from the Czech Republic, from Austria, from the Slovak Republic, and from Russia.

All analysed TBEV strains belonged to the Western subtype of TBEV. A total of 8 genetic clusters of TBEV could be distinguished. Within one single natural focus, TBEV of 2 different clusters were detected. TBEV coming from close proximity also belonged to different genetic clusters. Also TBEV strains from the eastern and western slopes of the Bavarian-Bohemian Mountains were shown to come from different genetic clusters.

The results imply that the Western subtype of TBEV shows a larger genetic heterogeneity than expected. The available data further imply multiple introductions of TBEV strains from eastern Europe into Germany. TBEV seems to disperse by different ways like natural routes (river valleys), migrating birds or human activities. Geographic barriers (mountains) seem to restrict the dispersal of TBEV in Central Europe.