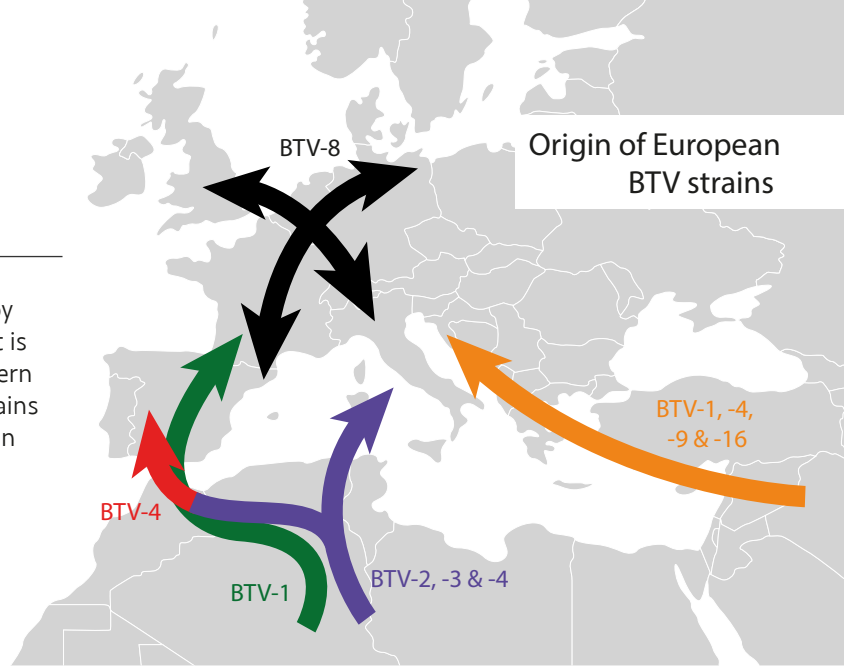


BTV STATE OF ART

BT virus (BTV) is transmitted by *Culicoides* biting midges and it is now endemic in several Southern European countries. Novel strains and topotypes are circulating in neighbouring Mediterranean countries posing a risk for the entire European livestock.

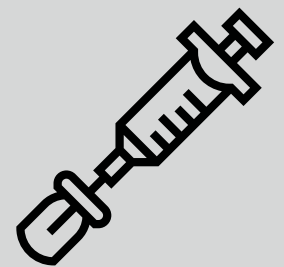


In recent years, a number of novel atypical BTV serotypes have been identified in the field in small ruminants. Pathogenesis and transmission of these emerging viruses - most likely affected by the genome constellation - are still to be clearly elucidated.

Recent studies have demonstrated that *Culicoides* saliva has a significant impact on the vertebrate host immune response. Disentangle the genetic and molecular basis regulating infections of the different vector species and populations represents the next challenge for researchers.



The most powerful weapon is represented by an ideal vaccine, able to protect against the disease in all ruminant species, to block viremia of multiple serotypes and to enable DIVA; it has to be administered in a single low dose, cheap to produce. However, the current BTV vaccines are BTV serotype-specific and are not compatible with DIVA. They have the potential to revert to virulence by genome segment reassortment (MLV) or may only induce low levels of protection (inactivated). They may potentially revert to virulence through genome segment reassortment (MLV) or - in case of inactivated vaccines - induce only low levels of protection.



PALE BLU CONSORTIUM

PALE-Blu brings together leading European laboratories with expertise in BTV research and diagnosis, with established institutes in endemic regions (Africa, the Middle East and Turkey) that represent a potential 'source' of the BTV strains that are continuously invading Europe.

PALE BLU MISSION

PALE-Blu investigates interactions between BTV, ruminant hosts and relevant insect vectors in the European ecosystem. The project focuses on genetic and environmental factors that can influence virus replication and transmission. It aims also at improving the preventive measures refining control strategies and models of disease spread, and at developing more efficient and effective diagnostic assays, antivirals and vaccines.

PROJECT AIMS

