

Research project IZS VE 05/11

Investigation on the molecular basis for antigenic diversity of fish betanodaviruses

Project coordinator: Giovanni Cattoli

Betanodaviruses are the causative agents of a highly destructive disease of marine fish known as viral encephalopathy and retinopathy (VER). At present, the lack of patented efficacious vaccines makes it difficult to control the spread of this virus, and acquisition of more information on betanodaviruses immunoreactivity is essential for the selection of adequate candidate vaccine strains.

The present project aims to clarify the antigenic relationships existing among a panel of betanodavirus isolates representative of different genotypes, with particular focus on the genetic variants currently circulating in Europe. The identification of putative cross-neutralizing epitopes provides useful information for the rational design of vaccines. Therefore, the establishment of a suitable reverse genetics system for betanodavirus, will allow us to engineer chimeric viruses to find out the genetic determinants responsible for the antigenic differences of distinct genotypes. Such information will be strategic for the identification of a candidate multivalent reverse-genetics virus, to be used for immunization purposes of commercially valuable finfish species.