

# IDENTIFICATION AND CHARACTERIZATION OF ORBIVIRUS ISOLATES FROM LA RÉUNION AND MARTINIQUE ISLANDS

D. Vitour<sup>1\*</sup> C. Sailleau<sup>1</sup>  
E. Breard<sup>1</sup> S. Zientara<sup>1</sup>

At the beginning of 2009, bluetongue (BT)-like clinical symptoms were reported in cattle on the French island of La Réunion (Indian Ocean). One hundred and twenty-three cows were blood tested for the presence of BT and/or epizootic haemorrhagic disease virus (EHDV) ribonucleic acid (RNA) by group specific reverse transcriptase polymerase chain reaction (RT-PCR). EHDV RNA was detected in 111 samples (90.2%), among which five were also positive for BTV RNA. Sequence analysis of EHDV segment 7 revealed that this circulating strain seemed to be similar to the one isolated in 2003 (99.8% nucleotide identity). The determination of the nucleotide sequence of segment 2 is under investigation. The vironeutralization test (VNT), serotype-specific RT-PCR, as well as sequence analysis identified the isolated BTV strain as serotype 2. These data showed that an EHDV outbreak occurred over the last winter in La Réunion, and it was concomitant to circulation of BTV. Epidemic or enzootic features of both these viruses are not yet known. Since this outbreak, molecular and serological tools specific to EHDV have been or are being developed.

Three years ago, 30 healthy head of cattle moved from Metropolitan France to the French Martinique Island (Caribbean Basin) and were distributed in four different farms. Animals were sampled (blood and serum) every 10 days until day 30 and tested for BTV infection by the enzyme-linked immunosorbent assay (ELISA) or RT-PCR assays. Unexpectedly, almost all animals became BTV positive within 20 days. Whenever possible, virus isolation on eggs and baby hamster kidney (BHK) cell cultures were performed. Interestingly, seven BT strains belonging to seven distinct serotypes (BTV-2, 9, 10, 17, 18, 22, 24) were isolated. The coding sequence of segments 7, 8, 9 and 10 of these seven serotypes was obtained, as well as a portion of segment 2. The phylogenetic analysis revealed an unprecedented divergence of these strains with other known BTV sequences.

**KEYWORDS:** EPIZOOTIC HAEMORRHAGIC DISEASE VIRUS – BLUETONGUE VIRUS – SEROTYPE – LA RÉUNION – MARTINIQUE ISLAND.

1. UMR 1161 Virologie, Afssa-Inra-Enva, 23 avenue du Général de Gaulle, 94704 Maisons-Alfort, France.

\* Corresponding author

Tel. : +33 1 43 96 73 30; Fax: +33 1 43 96 73 96

E-mail: dvitour@vet-alfort.fr