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Molecular epidemiology of Aleutian mink disease virus and a peptide ELISA developed in China

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Aleutian disease (AD) is a common immunosuppressive disease in mink farms world-wide. To obtain more detailed understanding of the molecular epidemiology of mink AMDV in China, 18 of the 280 positive samples were randomly selected and analyzed. Samples were collected from 5 farms in 5 provinces in China. Phylogenetic tree based on full length VP2 gene with 11 references isolates shows that AMDV strains formed five groups (I–V). Furthermore, six peptides derived from the AMDV structural protein VP2 were designed, synthesized, and used as ELISA antigens to detect anti-AMDV antibodies in the sera of infected minks. A peptide P1 exhibited good antigenicity. Compared with CIEP, the sensitivity and specificity of the peptide ELISA was 98.0% and 97.5%, respectively. Moreover, the ELISA also detected 342 early-stage infected samples. These results showed that both indigenous AMDV and imported AMDV were prevalent in the primary mink production areas in China and the novel peptide ELISA had better sensitivity compared with CIEP, and therefore could be preferable over CIEP for detecting anti-AMDV antibodies in serological screening.

Biography

Zhang Lei has completed her PhD degree from Heping Campus Jilin University. Now, she is an Associate Professor and Postgraduate Tutor of institute of Special Wild Economic Animals and Plants, Chinese Academy of Agricultural Sciences. She is mainly engaged in fur animal disease including molecular epidemiological investigation and diagnosis products research work. She has carried out systematic epidemiological investigation in fur animal freeding area in China. She first identified ADV spread in raccoon dogs. Recently, she developed a peptide ELISA for the diagnosis of Aleutian disease virus which provides a novel mass inspection method to ADV.

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