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Development of genotype VII NDV inactivated vaccine

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Newcastle disease virus (NDV), also known as avian paramyxovirus serotype 1, is a member of the family Paramyxoviridae and causes a highly contagious respiratory, neurological, or enteric disease in chickens. Currently, genotype VII strains are the predominant virulent strains. Although the different genotypes of NDV all belong to one serotype, it is still difficult to confer cross-protection under stressful environmental conditions. The aim of this work is to generate an attenuated NDV strain and develop a cell culture-derived genotype VII ND inactivate vaccine against current virulent NDV strains. After the 40th passage, we found that the MDT of NDV strains is higher than 120 hours, the intracerebral pathogenicity indexes (ICPI) had decreased to 0-0.08, and TCID₅₀ has reached 10⁸. The attenuated strain, KGM-01, is then inactivated and mixed with oil adjuvants for vaccine evaluation. Hemagglutination inhibition test showed that the inactivated vaccine elicited high antibody titer two weeks after immunization and no virus shedding was detected using real-time PCR when challenged with the Sato strain and field type VII strains. Thus, KGM-01 is a low virulent, type VII genotype strain with high antigenicity suitable for inactivated NDV vaccine development

Biography

Guan-Ming Ke is a licensed veterinarian and teaches at the National Pingtung University of Science & Technology as an associate professor. He focuses on animal vaccine development and production, continuously applying new technologies to develop new types of vaccines and to *better* the manufacturing process. His work aims to turn research into applicable technologies that will aid in disease prevention and improve both animal and human welfare.

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