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Development of a tissue culture origin vaccine for infectious Laryngotracheitis virus

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Infectious laryngotracheitis virus (ILTV), gallid herpesvirus 1 causes mild to severe upper respiratory disease in chickens. Live attenuated vaccines to control ILTV outbreaks have been developed using serial passages in chicken embryos (CEO) or tissue cultures (TCO) and the CEO vaccines have been using intensively worldwide. However, the CEO vaccines could acquire virulence through bird-to-bird passages, while the TCO vaccine could not be virulent. The TCO vaccine has not been registered in Korea.

In this study, we developed a TCO vaccine for ILTV with the Korean virulent field strain. Attenuation of the virulent field strain achieved through thirty times of serial passage of the parent stain in LMH cells. After serial passage, three times of pock purifications on chorioallantoic membrane were performed to select pocks that produced significantly smaller size than those of the parent strain.

A safety and efficacy test for two vaccine candidates were performed in specific-pathogen-free (SPF) birds. Fifty of six-week old SPF chickens were randomly assigned to five groups. Vaccination was performed via eye-drop method with TCO vaccine candidates and a commercial CEO vaccine (10^4 EID_{50}/bird). The all birds were challenged at 2 weeks post vaccination. TCO vaccine candidates were safer than the commercial CEO vaccine. However, vaccine efficacy of the TCO vaccines was less than that of the commercial CEO vaccine. The developed TCO vaccine will allow alternative vaccine program, which can be applied variable conditions of poultry flocks in the Korean field.

Biography:

Ms. Choi is a postgraduate student at College of Veterinary Medicine, Konkuk University, Seoul, South Korea.