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Efficient production of type O foot-and-mouth disease subunit vaccine using baculovirus expression system

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The foot and mouth disease (FMD) is a highly contagious viral disease of Artiodactyla, causing severe economy loss worldwide. In this study, the structural proteins VP1, VP2, VP3 and VP4 of FMD serotype O were produced with the concentrations between $250 \ \mu\text{g/mL}$ to $550 \ \mu\text{g/mL}$ by using baculovirus expression vector system (BEVS). This improved the low productivity problem of eukaryotic expression system. The concentration of the anti-FMD antibodies in animal sera can be distinguished by using purified VP1 proteins, which were coated on the ELISA plates, showing that the recombinant VP1 protein has good antigenicity. The virus like particles (VLPs) was observed under electric microscope by using the mixture of the four proteins and pH value adjustment. Presently, those four structural proteins were tested alone or in mixture in pig experiment. In conclusion, this subunit vaccine has the potential to provide protection against FMD.

Biography

Chi-Chi Wen holds a Master's degree in Veterinary Medicine from National Taiwan University. She is a Research Fellow at Graduate Institute of Animal Vaccine Technology of National Pingtung University of Science and Technology. Her research interest includes Molecular Biology and Biotechnology, continuing in the research of Veterinary Medicine. She focuses on development of animal vaccines, designing new type of vaccines with biotechnology, with the hope to help animals avoid suffering.

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