Immunology Summit-2013
OMICS Group Conferences
Accelerating Scientific Discovery
2nd International Conference on
Clinical & Cellular Immunology
October 15-17, 2013 Hampton Inn Tropicana, Las Vegas, USA

Induction of protective immune responses against EV71 in mice by baculovirus encoding a novel expression cassette for capsid protein VP1

Jimmy Kwang
National University of Singapore, Singapore

Abstract

EV71 is a major causative agent of hand, foot and mouth disease (HFMD) and is responsible for large outbreaks in various Asian Pacific countries. In the present study, we generated the recombinant baculovirus(Bac-VP1) encoding VP1 in a novel expression cassette. The transmembrane domain of hemagglutinin of the H3N2 influenza virus was included in the cassette as a minimal membrane anchor for VP1. The protective immunity of Bac-VP1 was investigated in a mouse model. The results showed that mice vaccinated with live Bac-VP1 had strong VP1 specific antibody responses. In an in vitro neutralization assayBac-VP1 sera exhibited cross-neutralization against homologous and heterologous EV71 strains with a maximum titer of 1:512. Passive immunization studies confirmed that these sera were able to provide100% protection against 5 MLD50 of mouse adapted EV71 (B4 strain). This study revealed that baculovirus displaying VP1 with a HA transmembrane domain efficiently induced cross-neutralizing antibody responses in mice.

Biography

Jimmy Kwang received his PhD degree in molecular virology in 1987 from the school of veterinary medicine, University of california at Davis. After one year of postdoctoral training at UC San Diego, school of medicine, he was recruited as senior scientist to work on the gene delivery and gene therapy projects in Viagene, San Diego. In 1989, he set up an animal disease research lab within the meat animal research center(MARC), USDA at clay center, Nebraska. His research projects were focused on the vaccinology and development of cost-effectiveness diagnostic tests. In 1997, he moved to IMA, NUS, Singapore and was appointed as associate professor to set up Animal Health Biotechnology Group. In 1999, he was promoted to Professor. Since 2002, he is professor within Temasek Life Sciences Laboratory, NUS.