Pacific Center for Emerging Infectious Diseases Research

University of Hawai'i Mānoa

COBRE/DEPT. OF TROPICAL MEDICINE SEMINAR

Mammalian Cell-derived Virus-like Particle (VLP) Vaccine Platform

In the past, viral vaccines were developed by attenuation or inactivation of the virus. Empirically derived viral vaccines, such as measles and mumps, are protective but immunocompromised individuals may be at risk. Formalin-inactivated vaccines, such Salk polio vaccine and rabies vaccine, are safe. However, not all formalin-inactivated viral vaccines are protective. A case in point is the formalin-inactivated RSV vaccine. Later, various ways of engineering the virus was attempted. Over time, thinking of vaccines has evolved to develop particulate-based vaccines such as virus-lilke particles (VLPs) and nano-particles. A mammalian cell-derived VLP technology will be described which can be used to generate VLPs in a short time to develop vaccine on a fast track. We have produced Nipah virus-like particles (NiV VLPs), respiratory syncytial virus (RSV) VLPs, RSV fVLPs, Zika VLPs. Zika VLPs were produced in less than 2 months. We have evaluated both NiV VLPs and RSV VLPs as vaccines; both showed protection in relevant animal models. RSV fVLPs show potent neutralizing antibody response and protection in the lung. This technology may be used to handle unexpected and uncontrolled out-breaks.

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Wednesday, June 29, 2016 at 11:00 AM
John A. Burns School of Medicine, Kaka'ako
Medical Education Building Auditorium (Room 315)
For further information, contact (808) 692-1654

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