Frank J Malinoski, J Vaccines Vaccin 2014, 5:5
http://dx.doi.org/10.4172/2157-7560.S1.020

OMICS Group Conferences
Accelerating Scientific Discovery

4th International Conference on
Vaccines & Vaccination
September 24-26, 2014 Valencia Convention Centre, Spain

Unique nanofabrication of antigens and adjuvants that effectively induces protective antibody and T cell responses

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The rapid formulation of antigens and adjuvants in precisely defined size, shape, and composition is now possible with the nanotechnology platform called PRINT™. This technology has been used to effectively co-delivery polysaccharides and bacterial proteins for encapsulated bacteria such as pneumococcus in virtual conjugates in which specific chemical conjugation is avoided. In the absence of added adjuvants both ELISA and opsonic immune responses equivalent or superior to the licensed Prevnar vaccine have been generated in both mice and rabbits. In addition, cellular responses, including IL-17 and IFN-γ, have been generated to specific pneumococcal proteins. Additional work using viral and protozoal antigens in conjunction with various TLR adjuvants have been used to demonstrate single dose responses to these antigens and the importance of formulating the adjuvant in the same particle as the antigen. PRINT offers a unique particle fabrication in a continuous manufacturing platform for rational design that can be adopted to provide vaccine solutions for multiple pathogens.

Biography

Frank J Malinoski completed his PhD at Rutgers University, NJ, USA and his MD at Albany Medical College, Albany, NY USA. After serving in the US Army for 11 years he embarked on a career in vaccine and medicines development in various companies including Lederle-Praxis, Nabi, Wyeth, and MedImmune and has consulted with government and NGOs on developing world vaccine needs. He has published extensively on vaccines and immunotherapy. He is currently Chief Medical Officer of Liquidia Technologies.

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