

[Print this Page for Your Records](#)[Close Window](#)**Control/Tracking Number:** 2009-LB-3510-ASM-ICAAC**Activity:** Late-Breaker Abstract**Current Date/Time:** 8/31/2009 3:01:30 PM**Efficacy And Broadly Reactive Immunity Directed Against Seasonal And Pandemic Strains Of Influenza Using Variosite Technology****Author Block:** D. E. ANDERSON, A. OGREL, C. SOARE, J. BOZIC, T. NAAS, B. ONTSOUKA, A. AZIZI, L. SANCEN, T. LE, R. WELZTIN, J. TORRES, F. DIAZ-MITOMA;

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**Abstract: Background:**

Trivalent seasonal influenza vaccines have a number of disadvantages including limited breadth of vaccine-induced immunity and relatively poor efficacy in at-risk populations such as the elderly. We have used a novel technology to develop a synthetic seasonal influenza vaccine designed to provide multi-season protection and address these disadvantages.

**Methods:**

We used crystallographic structural data while designing discontinuous B cell epitopes and also considered the location of human T cell epitopes. Our SFV2 vaccine contains 5 immunogens, as either single peptides or cocktails of peptides (Variosite formulations) that contain 16 peptide variants (a total of 35 distinct peptides). These peptide variants account for the antigenic variability present at these epitopes, accounting for past and future antigenic variation of the influenza virus in hemagglutinin (HA) and nucleoprotein (NP). These peptides were entrapped within a liposomal delivery vehicle that was then adsorbed to aluminum hydroxide (NAM-1 adjuvant system). We immunized ferrets intramuscularly on days 0 and 28 with SFV2/NAM1, the NAM1 vehicle lacking the SFV2 antigens, or with commercial influenza vaccine, and 14 days after the final vaccination, animals were challenged with influenza A/Solomon.

**Results:**

Peak (day 2) viral load was 1-log lower in animals vaccinated with SFV2/NAM1, and the magnitude and duration of fever was reduced. Efficacy correlated with very high titers of virus-specific serum IgG titers, as well as induction of hemagglutination inhibition (HI) titers. This reactivity extended across many drifted subtypes of influenza, including the recently emerged H1N1/California "swine" isolate.

**Conclusions:**

This vaccine and underlying technology represent a novel means of inducing broadly reactive immunity needed to protect against infection with variable pathogens.

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**Author Disclosure Information:****Category (Complete):** G2**Keyword (Complete):** influenza vaccine ; vaccine ; immune response**Status:** Complete[American Society for Microbiology](#)1752 N Street N.W.  
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