

World Congress on **Infectious Diseases**

August 10-12, 2015 London, UK

Mechanisms of protection mediated by *Streptococcus pneumoniae* PcpA- and PhtD-specific antibodies

Lucian Visan , N. Rouleau, E. Proust, L. Peyrot, A. Donadieu and M. Ochs
Sanofi Pasteur, France

The current marketed pneumococcal conjugate vaccines confer protection against up to 13 serotypes out of over 90 serotypes of *Streptococcus pneumoniae*. It is thought that replacement of vaccine serotypes with non-vaccine serotypes will negatively impact the efficacy of current pneumococcal conjugate vaccines. Sanofi Pasteur is developing a recombinant pneumococcal protein based vaccine including pneumococcal choline binding protein A (PcpA), pneumococcal histidine triad protein D (PhtD) and detoxified pneumolysin which are conserved proteins across serotypes, with potential for universal coverage against *S. pneumoniae* infections. Mice challenged intravenously with a lethal dose of *S. pneumoniae* are 100% protected against sepsis upon administration of PcpA- and PhtD-specific antibodies. To investigate the mechanism of protection mediated by PcpA and PhtD antibodies, we addressed the role of complement, the spleen, neutrophils and macrophages in deletion experiments by abrogating each of these immune components or combinations thereof in mice. Our data clearly shows that the protection mediated by the PcpA- and PhtD-specific antibodies is complement and macrophage dependent, because in their absence protection was abrogated. In contrast, splenectomized and neutrophil-depleted mice remained fully protected, implying that while they may contribute to protection their role is not indispensable. Our results provide an experimental framework for possible mechanisms of protection against pneumococcal disease exploited by vaccination with recombinant pneumococcal PcpA and PhtD proteins.

Biography

Lucian Visan has completed his Ph.D in immunology at Würzburg University, Germany, and moved to Mount Sinai Hospital, University of Toronto for postdoctoral studies. He is now a researcher at Sanofi Pasteur where he leads an immune-bacteriology research unit working on vaccine projects. He has over 10 years of experience in therapeutic and prophylactic vaccines ranging from cancer to infectious diseases.

vlucian@yahoo.com

Notes: