

6th Euro Global Summit and Expo on **Vaccines & Vaccination**

August 17-19, 2015 Birmingham, UK

A non-replicating Ad5 vaccine for treatment of HSV-2

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The requirement for more efficacious T cell inducing vaccines is evident, and delivering vaccines to the site of infection has obvious advantages for T cell effector and memory function. Mucosal sites of infection are particularly difficult to reach by normal injected vaccines. Vaxart is developing vaccines for mucosal delivery. Our proprietary vaccine platform technology uses a non-replicating adenovirus type 5 backbone with a TLR agonist as an adjuvant. We have recently completed several Phase I clinical trials using orally delivered enteric coated tablets for the prevention of influenza infection. The vaccine platform had an excellent safety profile with no difference in the reported adverse events between placebo and vaccine treated groups. Further, dose dependent T and B cell immune responses were observed; with up to 92% of subjects having a 4 fold or better increase in the neutralizing antibody responses to influenza. Here we present preclinical data with a HSV-2 therapeutic vaccine delivered via two mucosal routes. Immunogenicity data in outbred mice characterizing the vaccine antigens demonstrate both CD4 and CD8 polyfunctional T cells at the site of HSV replication. Additionally, in a guinea pig model of HSV-2 infection, treatment with Vaxart's HSV-2 vaccine reduced cumulative HSV lesion scores compared to untreated guinea pigs. Taken together this data suggests that mucosal delivery of HSV-2 vaccines is a promising tool for eliciting functional T cells at the site of HSV replication, and for preventing HSV lesion outbreaks.

Biography

Wendy Peters has over 15 years of experience in Cellular Immunology. She received her PhD in Immunology from Manchester University and completed her Postdoctoral studies at the Gladstone Institutes at UCSF. She has over 14 peer-reviewed publications and has held NIH grants for her research on Anthrax pathogenesis. In 2007 she moved into industry and has held Scientist positions at Medimmune Vaccines and Bayhill Therapeutics. She currently holds the position of Associate Director of Immunology at Vaxart Inc. where she leads both preclinical and clinical immunology research on Influenza, Ebola and HSV-2 vaccine programs.

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