

# HIV Preventive Vaccine

## Summary

A next-generation immunotherapy, targeting HIV peptide antigens to dendritic cell (DC) via novel recombinant antibody fusion proteins to mount cellular immunity. Baylor Scott & White Research Institute (BSWRI) has developed a novel DC-targeting vaccine for protective immunity against HIV-1.

### Key Investigator

Gerard Zurawski, PhD

### Field

Immunology

### Technology

DC-targeted fusion proteins

### Key Features

Preventive vaccine

### Stage of Development

Preclinical proof of concept

### Status

Available for licensing

### Patent Status

WO2008103953

### Contact

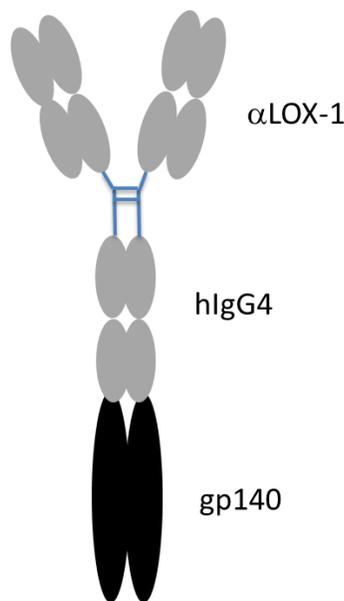
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### Market

Today, more people living with HIV than ever before have access to life-saving treatment with HIV medicines (called antiretroviral therapy or ART), which is good for their health and reduces the likelihood that they will transmit the virus to others if they adhere to their HIV medication. In addition, others who are at high risk for HIV infection have access to re-exposure Prophylaxis (PrEP), or ART being used to prevent HIV. Yet, unfortunately, approximately 50,000 Americans and 2 million people worldwide became newly infected with HIV in 2014. To control and ultimately end HIV globally, we need a powerful array of HIV prevention tools that are widely accessible to all who would benefit from them.

### Technology

One candidate molecule is a fusion protein of a humanized anti-LOX (IgG4) and HIV-1 envelope antigen (gp140 molecule) fused to both the heavy chains. LOX-1, or lectin-like oxidized low-density lipoprotein (LDL) receptor-1, is expressed on various antigen presenting cells and endothelial cells, and is involved in promoting humoral immune responses. In addition to anti-LOX fusion proteins, a humanized anti-CD40 DC-targeting vehicle is being developed with the HIV-1 envelope antigen. In collaboration with the National Agency of Research on AIDS and Viral Hepatitis (ANRS) in France, BSWRI and ANRS have demonstrated robust CD4+ and CD8+ Env-specific T cell response in vitro and in vivo in non-human primates. Cell Line development and manufacture of the anti-CD40 HIV-1 envelope fusion protein is nearly completed.



For additional information see publication: Zurawski, G., etc., Targeting HIV-1 Env gp140 to LOX-1 Elicits Immune Responses in Rhesus Macaques. PLoS One. 2016 Apr 14;11(4).